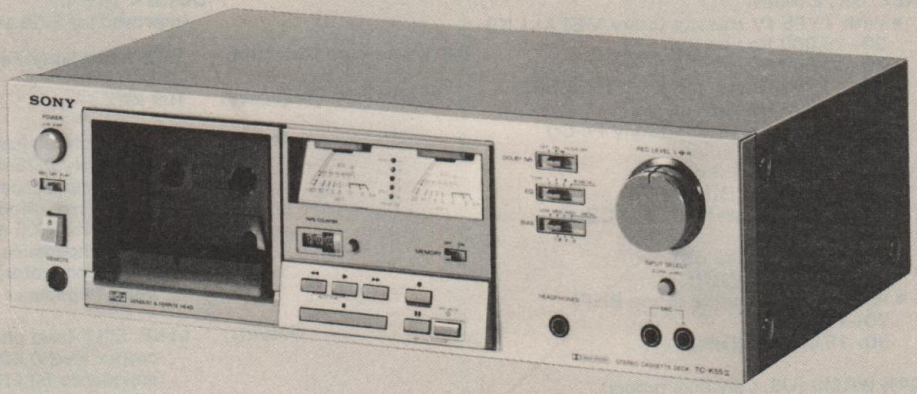
TC-K55II

PRELIMINARY

US Model
Canadian Model
AEP Model
UK Model
E Model



STEREO CASSETTE DECK

SPECIFICATIONS

GENERAL

Power Requirements:
US, Canadian model
120 V ac, 60 Hz
AEP model
220 V ac, 50/60 Hz
(or 240 V ac adjustable by authorized Sony personnel)
UK model
240 V ac, 50/60 Hz
(or 220 V ac, adjustable by authorized Sony personnel)
E model
110, 120, 220 or 240 V ac adjustable, 50/60 Hz

Power Consumption:
22 W (US, Canadian model)
26 W (AEP, UK model)
29 W (E model)

Dimensions:
Approx. 430 (w) x 130 (h) x 290 (d) mm
17 (w) x 5 1/8 (h) x 11 1/2 (d) inches
(US, AEP, UK, E model)
Approx. 460 (w) x 130 (h) x 290 (d) mm
18 1/8 (w) x 5 1/8 (h) x 11 1/2 (d) inches
(Canadian model)
including projecting parts and controls

Weight:
Approx. 5.2 kg, 11 lb 8 oz
(US, AEP, UK, E model)
Approx. 5.9 kg, 13 lb (Canadian model)

TAPE RECORDER SECTION

Recording System: 4-track 2-channel stereo

Fast-forward and Rewind Time: Approx. 80 sec. (with C-60)

Frequency Response: DOLBY NR OFF

Tape Transport Mechanism Type	TCM-100V3	
	Specification	Test Equipment
Forward Torque	28–43 g · cm (0.39–0.59 oz · inch)	Sony torque meter CQ-102
Back Tension Torque	2.5–4.5 g · cm (0.04–0.06 oz · inch)	Sony torque meter CQ-102
Pinch Roller Pressure	280–380 g (10–13 oz)	Spring scale or tension gauge

– Continued on page 2 –

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UN TRAMÉ ET UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES, LES VUES EXPLOSÉES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DES SUPPLÉMENTS PUBLIÉS PAR SONY.

SONY®
SERVICE MANUAL

US, Canadian model
- With Type IV cassette (Sony METALLIC)
  20–19,000 Hz
  30–17,000 Hz (±3 dB)
  30–13,000 Hz (±3 dB, 0 VU recording)
- With TYPE III cassette (Sony Fe-Cr)
  20–19,000 Hz
  30–17,000 Hz (±3 dB)
- With TYPE II cassette (Sony EHF)
  20–18,000 Hz
  30–16,000 Hz (±3 dB)
- With TYPE I cassette (Sony HFX)
  20–17,000 Hz

AEP, UK, E model
- With TYPE IV cassette (Sony METALLIC)
  20–19,000 Hz
  30–17,000 Hz (±3 dB)
  30–13,000 Hz (±3 dB, 0 VU recording)
  30–17,000 Hz (DIN)
- With TYPE III cassette (Sony Fe-Cr)
  20–19,000 Hz
  30–17,000 Hz (±3 dB)
  30–17,000 Hz (DIN)
- With TYPE II cassette (Sony CD-α)
  20–18,000 Hz
  30–16,000 Hz (±3 dB)
  30–16,000 Hz (DIN)
- With TYPE I cassette (Sony BHF)
  20–17,000 Hz
  30–15,000 Hz (DIN)

Wow and Flutter: 0.04% WRMS (US, Canadian model)
0.04% WRMS (NAB) } (AEP, UK, E model)
±0.12% (DIN) }

S/N Ratio: DOLBY NR OFF
US, Canadian model
- With TYPE III cassette (Sony Fe-Cr)
  59 dB at peak level
- With TYPE II cassette (Sony EHF)
  57 dB at peak level

AEP, UK, E, model
- With TYPE III cassette (Sony Fe-Cr)
  59 dB at peak level (NAB)
  57 dB (DIN, 1975, rev.)
- With TYPE II cassette (Sony CD-α)
  57 dB at peak level (NAB)

DOLBY NR ON
Improved by 5 dB at 1 kHz, 10 dB above 5 kHz

Total Harmonic Distortion: 1.0% (with Sony Fe-Cr cassette)

Record Bias Frequency: 105 kHz

Inputs: MIC (two phone jacks)
sensitivity 0.25mV (–70 dB) for a low-impedance microphone
LINE IN (two phono jacks)
sensitivity 77.5 mV (–20 dB)
input impedance 50 kΩ
REC/PB (connector) . . . (AEP, UK, E model)
input impedance less than 10 kΩ

Outputs: LINE OUT (two phono jacks)
output level 0.435 V (–5 dB) at load impedance 50 kΩ
suitable load impedance more than 10 kΩ
Headphone (binaural jack)
output level –26 dB at load impedance 8 Ω
REC/PB (connector) . . . (AEP, UK, E model)
output impedance less than 10 kΩ

0 dB = 0.775 V

1. SCHEMATIC DIAGRAM – System Control Section –

Refer to page 5 for voltages and waveforms at the terminals of IC801.

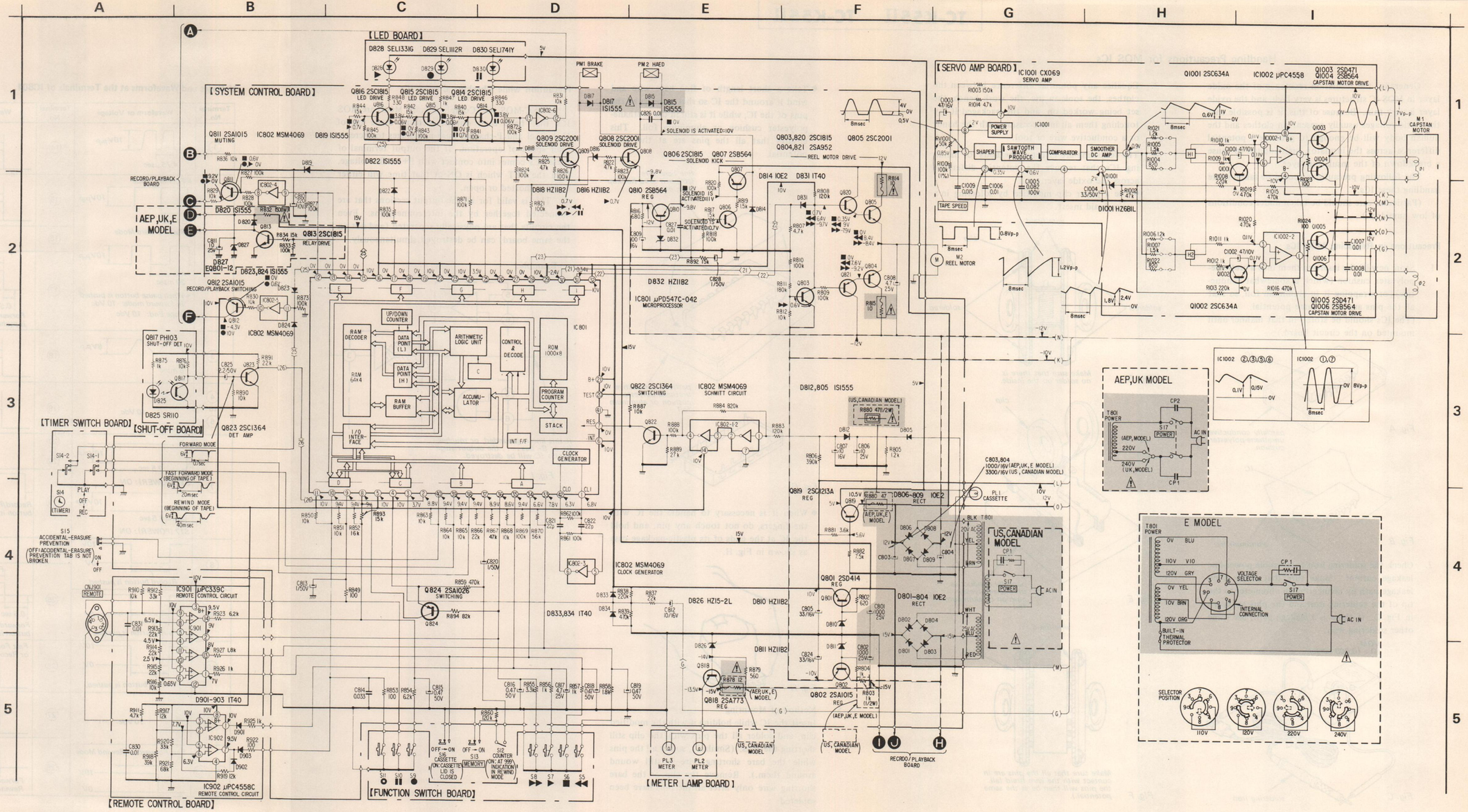
Note:

- All capacitors are in μF unless otherwise noted. pF = μμF 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ : 1000 Ω, MΩ = 1000 kΩ
- : fusible resistor.
- : nonflammable resistor.
- 1 % indicates component tolerance.
- ——— : B+ bus.
- – – – : B– bus.
- ▭ : panel designation.
- ▭ : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a VOM (20 kΩ/V).
  - no mark: STOP
  - ▶ : FORWARD
  - ▶▶ : FAST FORWARD
  - ◀◀ : REWIND
  - ● : RECORD
  - ○ : REC MUTE
  - ❚❚ : PAUSE
  - ■ : STOP
- Voltage variations may be noted due to normal production tolerances.
- Switch

Ref. No.	Switch	Position
S5	REWIND	OFF
S6	STOP	OFF
S7	FORWARD	OFF
S8	FAST FORWARD	OFF
S9	RECORD	OFF
S10	PAUSE	OFF
S11	REC MUTE	OFF
S12	COUNTER	OFF
S13	MEMORY	OFF
S14-1, 2	TIMER	OFF
S15	ACCIDENTAL-ERASURE PREVENTION	ON
S16	CASSETTE	OFF
S17	POWER	OFF

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Né les remplacer que par une pièce portant le numéro spécifié.



Handling Precautions for MOS ICs

Generally, the insulation resistance of the oxide layer in MOS IC structures is very high, and the oxide layer is very thin. Because of this, it is possible that the static voltages usually present on clothes and the human body will be enough to generate a potential difference across the insulator, high enough to cause a breakdown of the insulating layer.

The following precautions should be taken while handling these ICs.

(Particular care should be taken under conditions of low humidity.)

Precautions in Replacing MOS ICs

1. Store new ICs by inserting them into a urethane-polyester cushion (which is somewhat conductive), or wrapping it in aluminum foil, so that all the pins are at the same potential.
   (The ICs should be stored in that manner until mounted on the circuit board.)

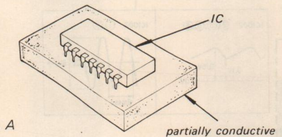


Fig. A

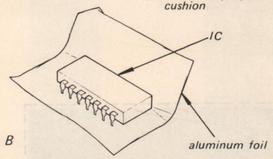


Fig. B

2. Check the soldering iron for possible power-line leakage current. Make sure that there is no leakage path by connecting an ohmmeter to the tip of the soldering iron and the plug as shown in Fig. C. If there is a leakage path, use some other soldering iron.

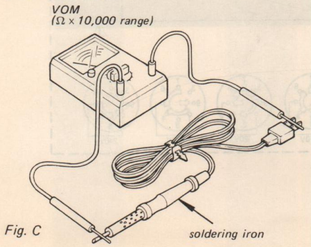


Fig. C

3. Equalize any potential difference between the clothes, the tools in use, the work bench, the set being worked on, and the packaged IC by touching them all in succession with the hands or a conductive wire or tool.
4. The following are effective methods for handling ICs that remove the potential difference across the oxide layer.
   - Use a paper clip modified by soldering in a wire braid insert.

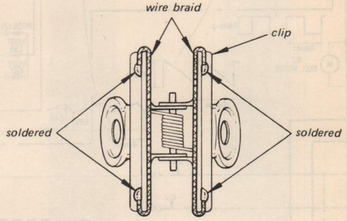


Fig. D

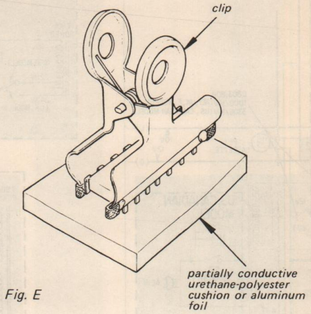


Fig. E

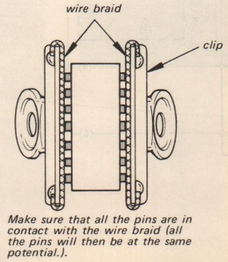


Fig. F

- Take a short length of fine bare wire and wind it around the IC so that it shorts all the pins of the IC, while it is still in the urethane-polyester cushion or aluminum foil. This ensures that all the pins are at the same potential.

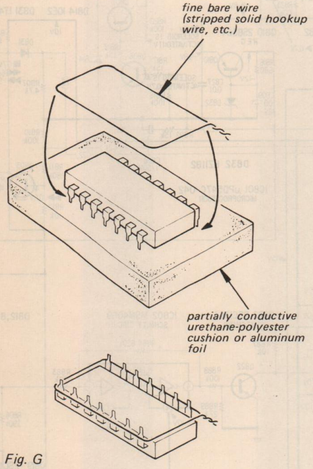


Fig. G

- When it is necessary to handle the IC with the fingers, do not touch any pin, and hold the IC at the ends of its plastic-package case as shown in Fig. H.

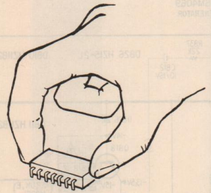


Fig. H

5. Method of Mounting
   Insert the IC while holding it with the modified clip, and solder all the pins with the clip still shorting the pins. (Similarly, solder all the pins while the bare shorting wire is still wound around them.). Remove the clip or the bare shorting wire only after all the pins have been soldered.

Precaution while Checking C-MOS ICs

The C-MOS ICs (Complementary MOS) are MOS ICs that have their output sections made up of N-channel and P-channel push-pull stages to increase their speed of operation. If the output terminal of these ICs comes into contact with B+ or B– voltage, then the FET which is ON at that time will either become shorted or open.

This is valid for all the output sections that are connected together by the interconnections. Even the circuits that are physically separated (and not on the same board) can be destroyed simultaneously.

Example:

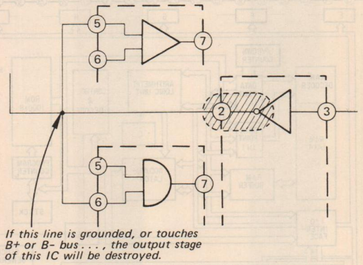


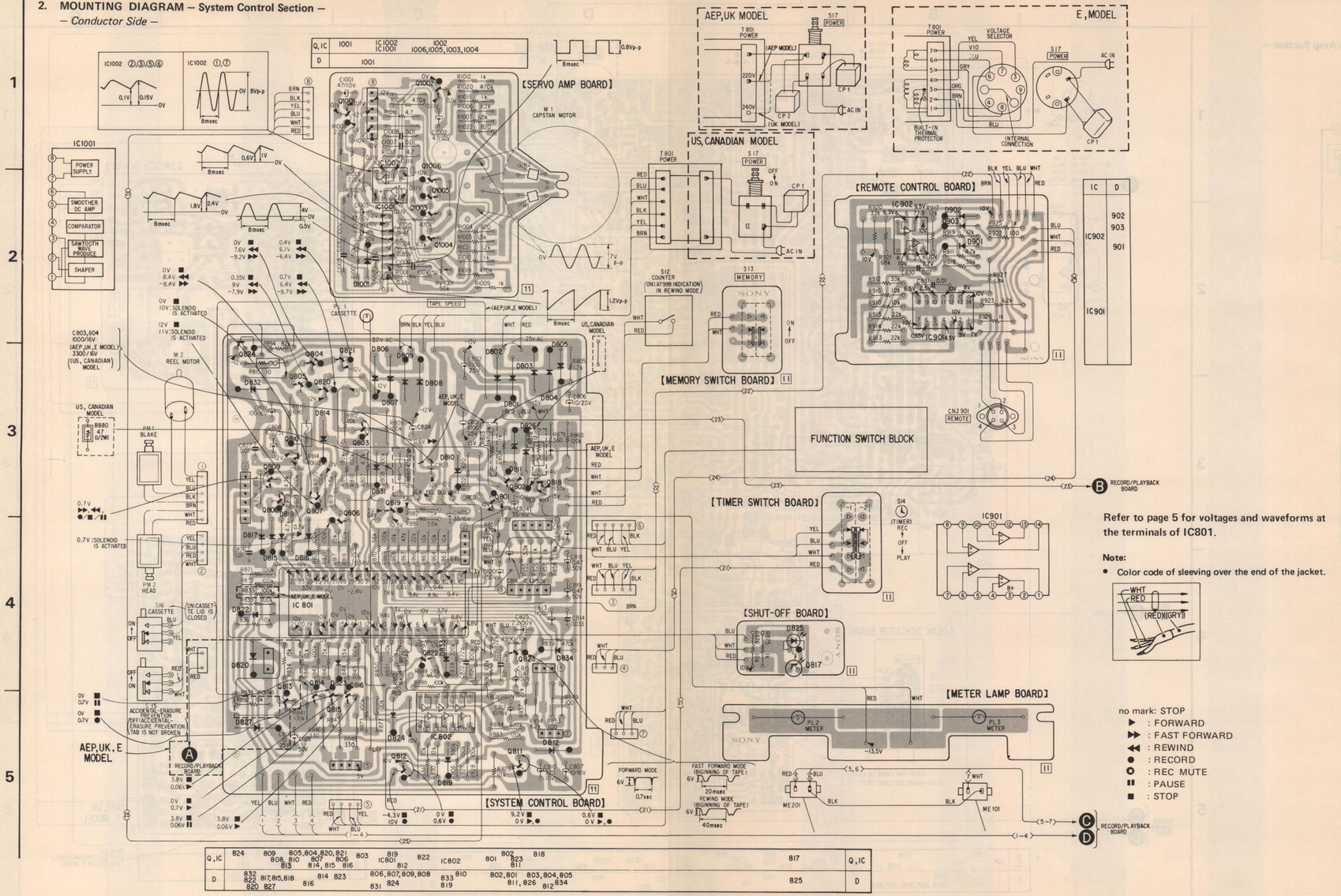
Fig. I

Voltages and Waveforms at the Terminals of IC801.

Terminal No.	Waveform or Voltage	Terminal No.	Waveform or Voltage	Terminal No.	Waveform or Voltage
1	10Vp-p; 4.75 μsec	14	Forward Mode: 10V / 0V	29	10 Vdc
2	• Forward Mode: 10Vp-p; 0.7 sec • Fast Forward Mode: 10Vp-p; 20 msec • When pause botton is pushed in forward mode: 10 Vdc • Tape End: 10 Vdc	15	Record Mode: 10V / 0V	30	Fast Forward Mode: 10V / 0V; –2.2V; 0.3 sec. Fast Forward button is pushed.
		16	10 Vdc		
		17	Forward Mode: 10V / 0V; 0.5 sec Forward button is pushed.	31	Rewind Mode: 10V / 0V; 0.3 sec Rewind button is pushed.
3	8Vp-p; 8 msec	18	Record/Forward Mode: 10V / 0V	32	10 Vdc
4 to 6	10 Vdc	19	Pause Mode: 10V / 0V	33	10V / 0V Rewind button is pushed.
7	10Vp-p; 2.5 sec S17 (POWER): ON 10Vp-p; 0.5 sec S17 (POWER): ON	20 to 22	10 Vdc	34	10V / 0V Stop button is pushed or the cassette lid is open.
		23	10V / 0V Record/Forward button is pushed. Record Muting or Pause button is pushed.	35	10V / 0V Forward button is pushed.
8	10V / 0V Record button is pushed.	24	10 Vdc	36	10V / 0V Fast Forward button is pushed.
9	10V / 0V Pause button is pushed.	25	Forward or Record Mode: 10V; 3.3V / 0V; 0.6 sec Forward or Record button is pushed.	37	• S13(MEMORY): ON 10V / 0V Tape counter is at 999 in rewind mode.
10	10V / 0V Record button is pushed.	26	Fast Forward or Rewind Mode or Record/Forward/Pause Mode: 10V / 0V	38	• S14(timer): PLAY 0V dc
				39	• S14 (timer): REC 0V dc
11	10 Vdc	27	Forward Mode: 10V / 0V	40	When the accidental erasure prevention tab is broken: 0 V When the accidental erasure prevention tab is not broken: 10 V
12, 13	Fast Forward or Rewind Mode: 10V / 0V	28	0.35 sec.; 10V / 0V Forward or Fast Forward or Rewind button is pushed.	41	0 Vdc
				42	4Vp-p; 4.75 μsec

2. MOUNTING DIAGRAM – System Control Section –

– Conductor Side –



Refer to page 5 for voltages and waveforms at the terminals of IC801.

Note:

- Color code of sleeving over the end of the jacket.

no mark: STOP
- ▶ : FORWARD
- ▶▶ : FAST FORWARD
- ◀◀ : REWIND
- ● : RECORD
- ○ : REC MUTE
- ❚❚ : PAUSE
- ■ : STOP

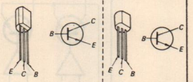
- **Replacement Semiconductors**

For replacement, use semiconductors except in ( ).

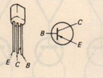
Q801: 2SD414

Q802, 811, 812: 2SA1027R (2SA1015)
Q824: 2SA1027R (2SA1026)

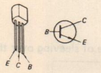
Q803, 806
Q813, (AEP, UK, E model) : 2SC1364 (2SC1815)
Q814–816, 820



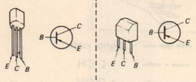
Q804, 821: 2SA952
Q818: 2SA684 (2SA773)



Q805, 808, 809: 2SC2001

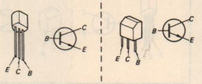


Q807, 810
Q1004, 1006 : 2SA684 (2SB564)



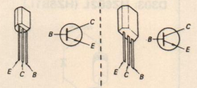
Q817: PH103-1M (PH103)

Q819: 2SC1475 (2SC1213A)
Q1003, 1005: 2SC1474 (2SD471)



Q822, 823: 2SC1364

Q1001, 1002: 2SC1364 (2SC634A)



D801–804
D806–809 : 10E2
D814
D805, 812, 815
D817, 819
D820 (AEP, UK, E model) : 1S1555
D822–824
D831, 833
D834, 901–903 : 1S1555 (1T40)

D810, 811, 816
D818, 832 : HZ11B2L (HZ11B2)
D826: HZ15-2L
D1001: HZ6B2L (HZ6B1L)

D825: SR110

D827 (AEP, UK, E model) : EQB01-12Z (EQB01-12)

D828: SEL1331G

D829: SEL1112R

D830: SEL1741Y

IC801: μPD547C-042

IC802: MSM4069
IC901: μPC339C

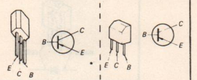
IC1001: CX069

IC902: μPC4558C
IC1002: μPC4558C (μPC4558)

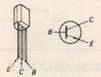
- **Replacement Semiconductors**
  For replacement, use semiconductors except in ( ).

Q101, 102, 104, Q201, 202, 204, Q106, 206: 2SC1345

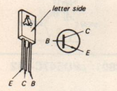
Q103, 203: 2SA1027R (2SA836)



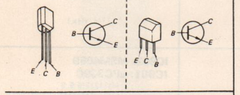
Q105,107,108 Q205, 207, 208 Q305, 308: 2SC1364



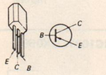
Q301: 2SD414



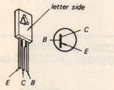
Q302: 2SC1364 (2SC458C)



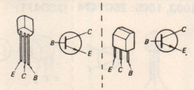
Q303: 2SA1027R (2SA844)
Q307: 2SA1027R (2SA1026)



Q304: 2SB548



Q306: 2SC1475 (2SC1213A)



D101, 201: 1T22AM (1T22)
D301, 302: 1S1555

D303: HZ6B2L (HZ6B1L)

D304–306: SEL1112R
D307, 308: SEL1312G

IC101, 201: CX174

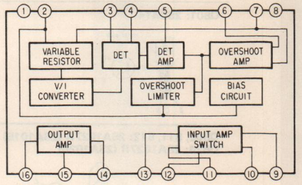
IC301: μPC4557C

IC302: TL489CP (TL489C)

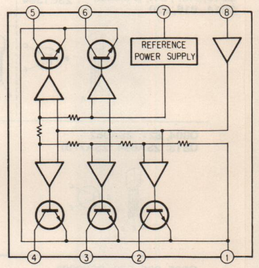
3. MOUNTING DIAGRAM – Audio Amp Section –

– Conductor Side –

IC101

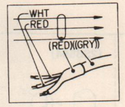


IC302



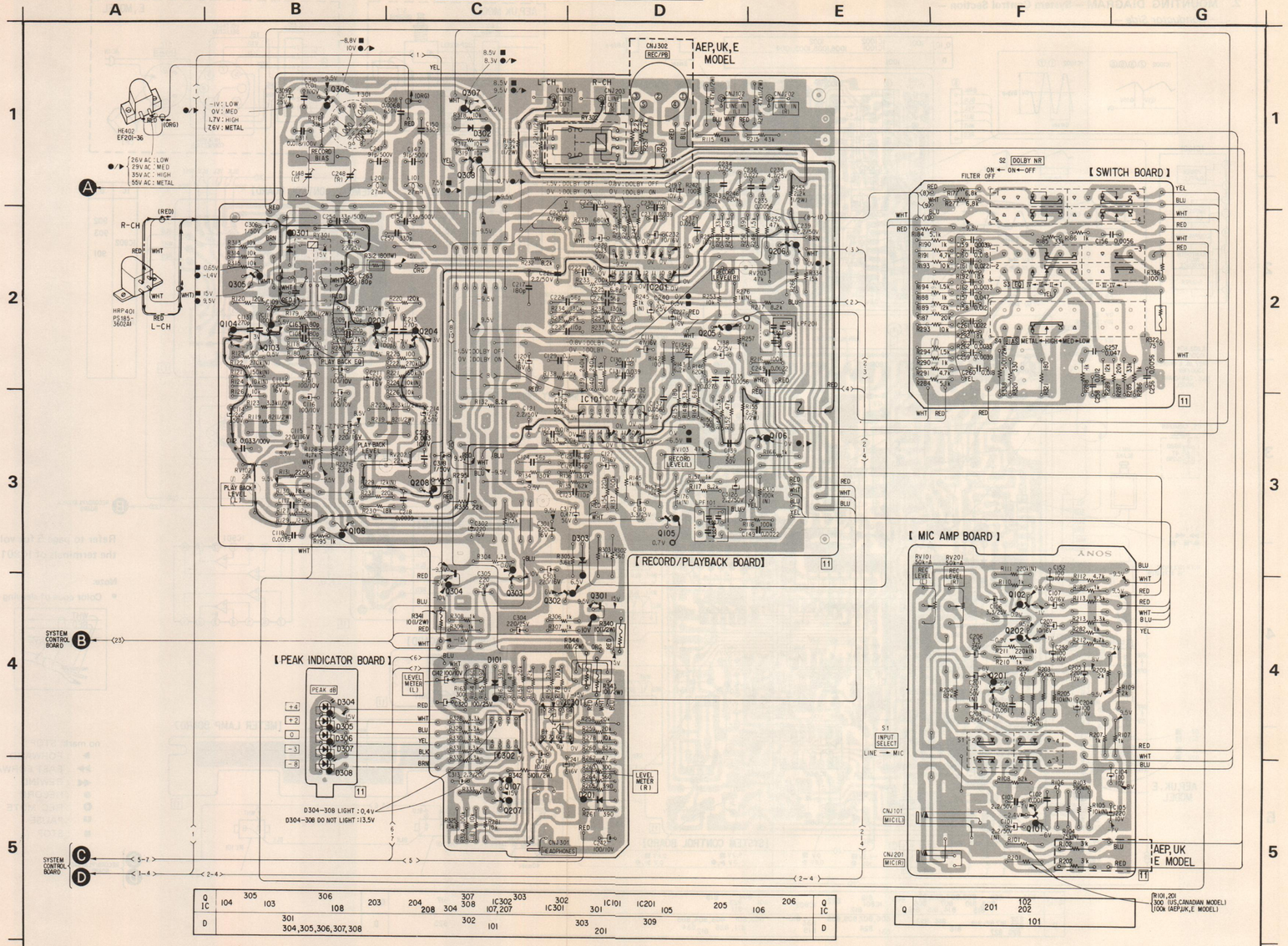
Note:

- Color code of sleeving over the end of the jacket.

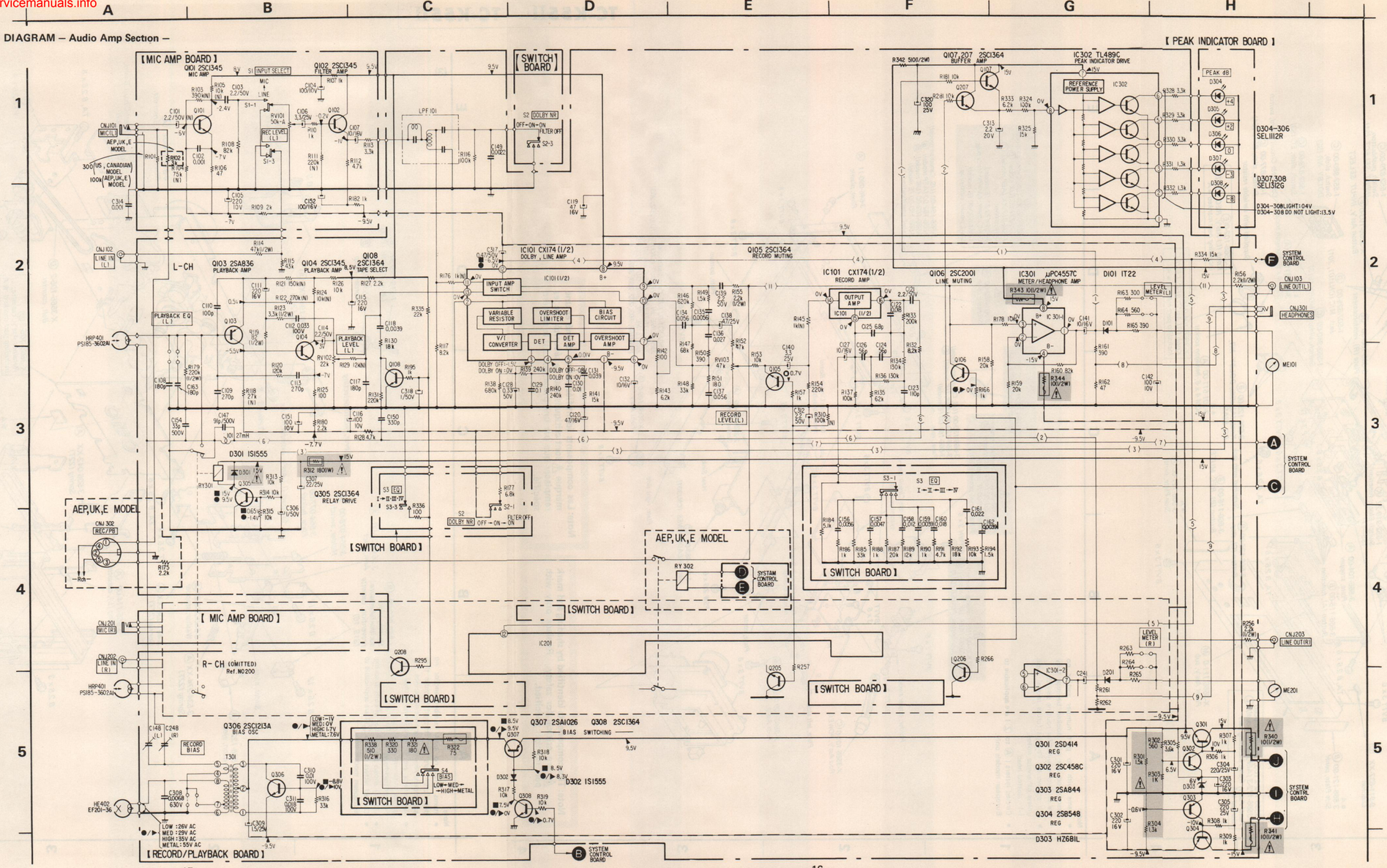


- ——▶—— : signal path
  ——·——▶ : L-CH
  ——··——▶ : R-CH

no mark: STOP
▶ : FORWARD
▶▶ : FAST FORWARD
◀◀ : REWIND
● : RECORD
○ : REC MUTE
❚❚ : PAUSE
■ : STOP



4. SCHEMATIC DIAGRAM – Audio Amp Section –



Note:

- Components for right channel have same values as for left channel. Reference numbers are coded from 200.
- All capacitors are in μF unless otherwise noted. pF = μμF 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ : 1000 Ω, MΩ = 1000 kΩ
- : fusible resistor.
- : nonflammable resistor.
- (N) : low-noise.
- : B+ bus.
- : B– bus.
- : panel designation.
- : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no signal conditions with a VOM (20 kΩ/V).
  no mark: STOP
  ▶ : FORWARD
  ▶▶ : FAST FORWARD
  ◀◀ : REWIND
  ● : RECORD
  ◎ : REC MUTE
  ❚❚ : PAUSE
  ■ : STOP
- AC voltage readings in the bias oscillator circuit are taken with a VTVM.
- Voltage variations may be noted due to normal production tolerances.
- Switch

Ref. No.	Switch	Position
S1-1 to 1-4	INPUT SELECT	LINE
S2-1 to 2-4	DOLBY NR	OFF
S3-1 to 3-3	EQ	I
S4	BIAS	MED

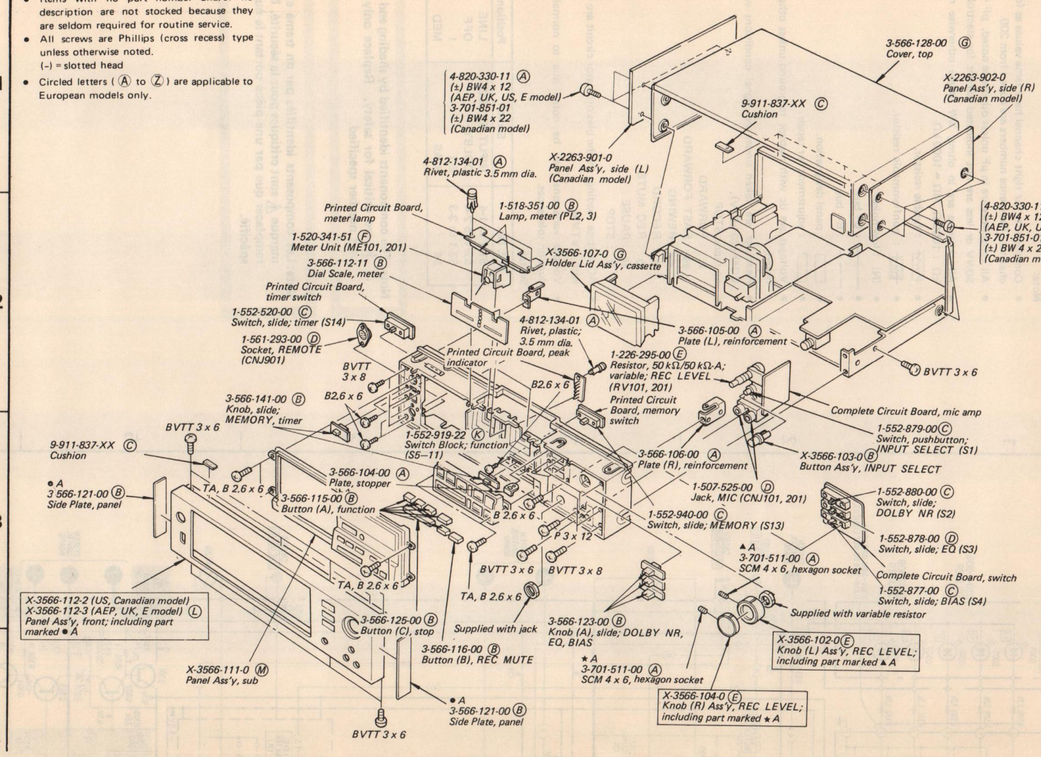
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

5. EXPLODED VIEWS

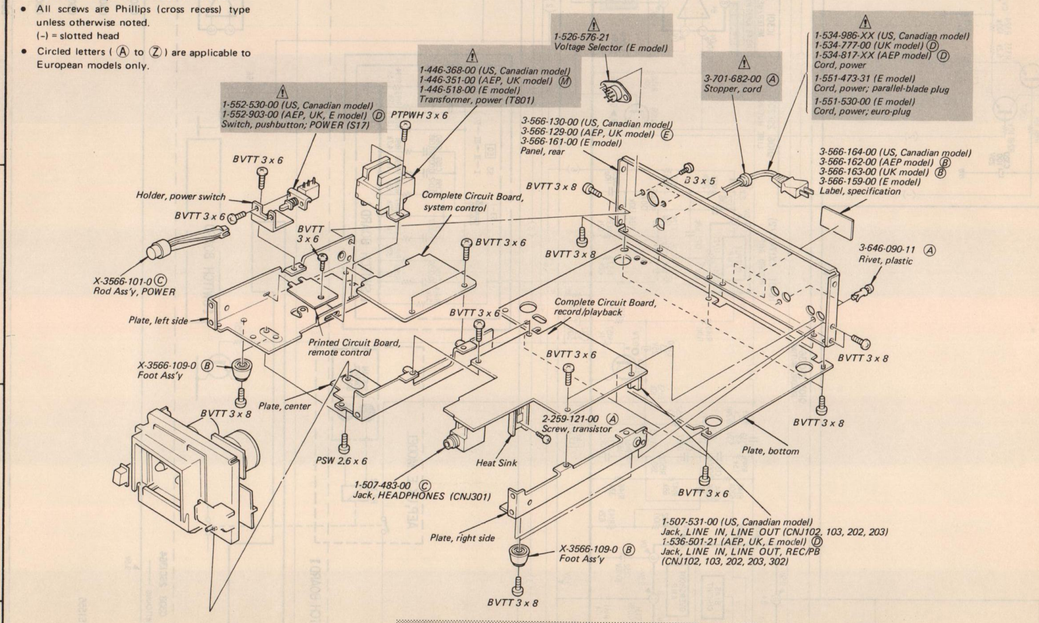
(1)

Note:
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted. (–) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.



(2)

Note:
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted. (–) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

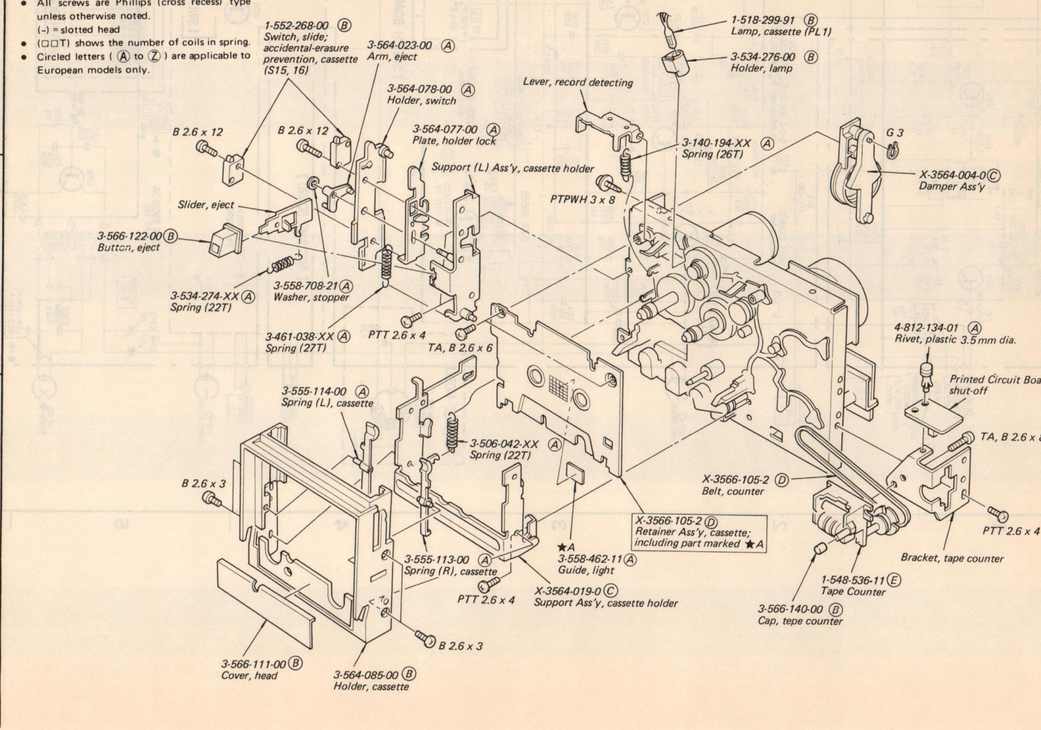


Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

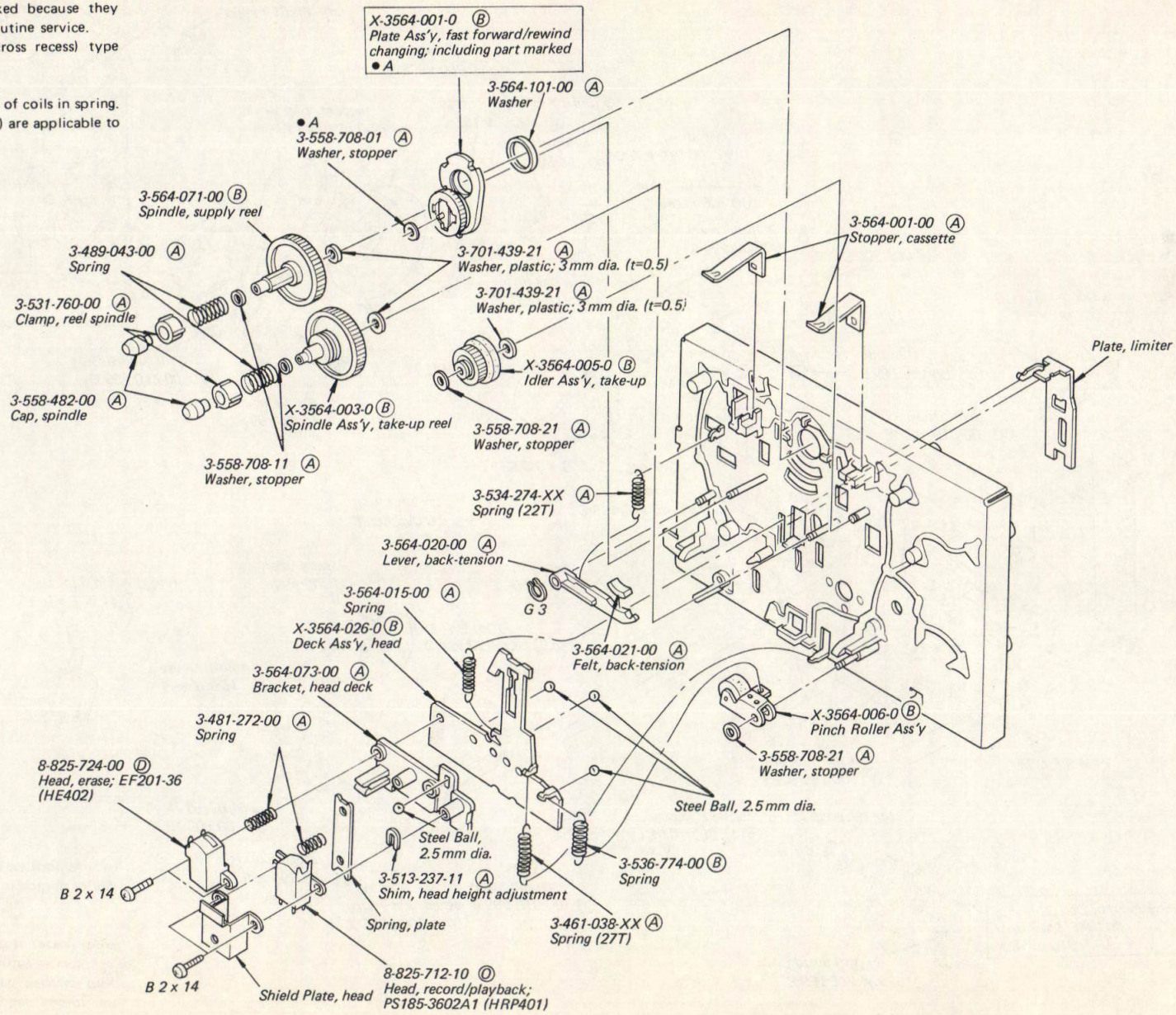
(3)

Note:
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted. (–) = slotted head
- (□□T) shows the number of coils in spring.
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.



Note:

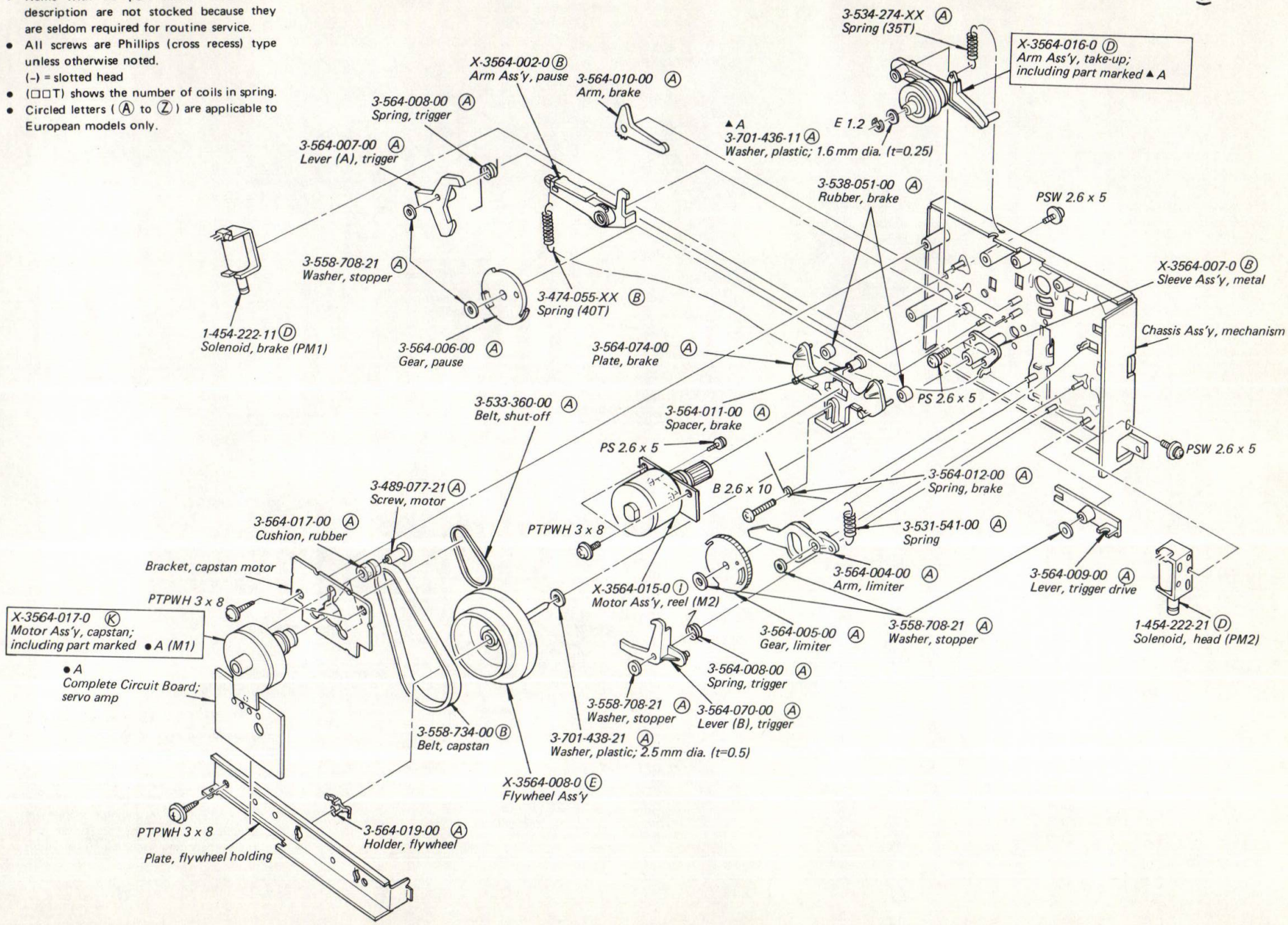
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (-) = slotted head
- (□□T) shows the number of coils in spring.
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.



(5)

Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (-) = slotted head
- (□□T) shows the number of coils in spring.
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.



6. ELECTRICAL PARTS LIST

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	Part No.	Description
		SEMICONDUCTORS
		Transistors
Q101, 201, Q102, 202	8-729-334-58	Ⓑ 2SC1345
⇒Q103, 203	8-729-612-77	Ⓑ 2SA1027R
Q104, 204	8-729-334-58	Ⓑ 2SC1345
Q105, 205	8-729-663-47	Ⓒ 2SC1364
Q106, 206	8-729-100-13	Ⓑ 2SC2001
Q107, 207, Q108, 208	8-729-663-47	Ⓒ 2SC1364
Q301	8-729-141-43	Ⓑ 2SD414
⇒Q302	8-729-663-47	Ⓒ 2SC1364
⇒Q303	8-729-612-77	Ⓑ 2SA1027R
Q304	8-729-154-83	Ⓑ 2SB548
Q305	8-729-663-47	Ⓒ 2SC1364
⇒Q306	8-760-413-10	Ⓑ 2SC1475
Q307	8-729-612-77	Ⓑ 2SA1027R
Q308	8-729-663-47	Ⓒ 2SC1364
Q801	8-729-141-43	Ⓑ 2SD414
⇒Q802	8-729-612-77	Ⓑ 2SA1027R
⇒Q803	8-729-663-47	Ⓒ 2SC1364
Q804	8-729-195-23	Ⓑ 2SA952
Q805	8-729-100-13	Ⓑ 2SC2001
⇒Q806	8-729-663-47	Ⓒ 2SC1364
⇒Q807	8-729-468-43	Ⓒ 2SA684
Q808, 809	8-729-100-13	Ⓑ 2SC2001
⇒Q810	8-729-468-43	Ⓒ 2SA684
⇒Q811, 812	8-729-612-77	Ⓑ 2SA1027R
⇒Q813	8-729-663-47	Ⓒ 2SC1364 (AEP, UK, E model)
⇒Q814–816	8-729-663-47	Ⓒ 2SC1364
⇒Q817	8-729-101-03	Ⓒ PH103-1M
⇒Q818	8-729-468-43	Ⓒ 2SA684
⇒Q819	8-760-413-10	Ⓑ 2SC1475
⇒Q820	8-729-663-47	Ⓒ 2SC1364
Q821	8-729-195-23	Ⓑ 2SA952
Q822, 823	8-729-663-47	Ⓒ 2SC1364
⇒Q824	8-729-612-77	Ⓑ 2SA1027R
⇒Q1001,1002	8-729-663-47	Ⓒ 2SC1364
⇒Q1003	8-760-335-10	Ⓑ 2SC1474
⇒Q1004	8-729-468-43	Ⓒ 2SA684
⇒Q1005	8-760-335-10	Ⓒ 2SC1474
⇒Q1006	8-729-468-43	Ⓒ 2SA684
		ICs
IC101, 201	8-759-101-74	Ⓖ CX174
IC301	8-759-145-57	Ⓓ μPC4557C
⇒IC302	8-759-904-89	Ⓓ TL489CP
IC801	8-759-147-42	Ⓚ μPD547C-042
IC802	8-759-904-69	Ⓒ MSM4069
IC901	8-759-133-90	Ⓕ μPC339C
IC902	8-759-145-58	Ⓓ μPC4558C
IC1001	8-750-690-00	Ⓓ CX069
⇒IC1002	8-759-145-58	Ⓓ μPC4558C
		Diodes
⇒D101, 201	8-719-422-21	Ⓑ 1T22AM
D301	⚠8-719-815-55	Ⓑ 1S1555
D302	8-719-815-55	Ⓑ 1S1555
⇒D303	8-719-910-65	Ⓑ HZ6B2L
D304–306	8-719-311-12	Ⓑ SEL1112R
D307, 308	8-719-313-12	Ⓑ SEL1312G
D801–804	⚠8-719-200-02	Ⓑ 10E2
D805	8-719-815-55	Ⓑ 1S1555
D806–809	⚠8-719-200-02	Ⓑ 10E2
⇒D810, 811	8-719-910-15	Ⓑ HZ11B2L
D812	8-719-815-55	Ⓑ 1S1555
D814	8-719-200-02	Ⓑ 10E2
D815	⚠8-719-815-55	Ⓑ 1S1555
⇒D816	8-719-910-15	Ⓑ HZ11B2L
D817	⚠8-719-815-55	Ⓑ 1S1555
⇒D818	8-719-910-15	Ⓑ HZ11B2L
D819	8-719-815-55	Ⓑ 1S1555
D820	8-719-815-55	Ⓑ 1S1555 (AEP, UK model)
D822–824	8-719-815-55	Ⓑ 1S1555
D825	8-719-101-11	Ⓑ SR110

⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	*Part No.*	*Description*
D826	8-719-910-52 Ⓑ	HZ15-2L
⇒ D827	8-719-930-12 Ⓑ	EQB01-12Z (AEP, UK, E model)
D828		SEL1331G
D829	8-719-311-12 Ⓑ	SEL1112R
D830		SEL1741Y
⇒ D831	8-719-815-55 Ⓑ	1S1555
⇒ D832	8-719-910-15 Ⓑ	HZ11B2L
⇒ D833,834 D901–903	8-719-815-55 Ⓑ	1S1555
⇒ D1001	8-719-910-65 Ⓑ	HZ6B2L

COILS

L101, 201	1-407-211-XX Ⓑ	27 mH, microinductor

TRANSFORMERS

T301	1-433-132-11 Ⓑ	Osc
T801	⚠1-446-351-00 Ⓜ	Power (AEP, UK model)
	⚠1-446-368-00	Power (US, Canadian model)
	⚠1-446-518-00	Power (E model)

CAPACITORS

All capacitors are in μF and ceramic unless otherwise noted. 50WV or less are not indicated except for electrolytics and tantalum. p : μμF, elect : electrolytic.

C101, 201	1-121-450-00	Ⓐ	2.2	50 V	elect
C102, 202	1-161-323-00	Ⓐ	0.001		
C103, 203	1-121-230-00	Ⓑ	2.2	50 V	elect (nonpolarized)
C104, 204	1-123-307-00	Ⓑ	100	10 V	elect
C105, 205	1-123-308-00	Ⓐ	220	10 V	elect
C106, 206	1-121-392-00	Ⓐ	3.3	25 V	elect
C107, 207	1-121-651-00	Ⓐ	10	16 V	elect
C108, 208	1-161-314-00	Ⓐ	180p		
C109, 209	1-161-316-00	Ⓐ	270p		
C110, 210	1-161-271-00	Ⓐ	100p		
C111, 211	1-121-421-00	Ⓑ	220	16 V	elect
C112, 212	1-130-309-00	Ⓐ	0.033	100 V	polyethylene
C113, 213	1-161-316-00	Ⓐ	270p		
C114, 214	1-121-450-00	Ⓐ	2.2	50 V	elect
C115, 215	1-121-421-00	Ⓑ	220	16 V	elect
C116, 216	1-121-414-00	Ⓐ	100	10 V	elect
C117, 217	1-161-314-00	Ⓐ	180p		
C118, 218	1-108-569-00	Ⓑ	0.0039		
C119, 219 C120, 220	1-121-409-00	Ⓐ	47	16 V	elect
C121, 221	1-123-230-00		2.2	50 V	elect (nonpolarized)
C122, 222	1-108-585-00	Ⓑ	0.018		mylar
C123, 223	1-161-347-00	Ⓐ	110p		
C124, 224	1-161-268-00	Ⓐ	56p		
C125, 225	1-161-257-00	Ⓐ	6.8p		
C126, 226	1-161-268-00	Ⓐ	56p		
C127, 227	1-121-651-00	Ⓐ	10	16 V	elect
C128, 228	1-123-286-00	Ⓐ	0.33	50 V	elect
C129, 229,	1-108-251-00	Ⓑ	0.1		mylar
C130, 230	1-108-239-00	Ⓐ	0.01		mylar
C131, 231	1-108-360-00	Ⓐ	0.039		mylar
C132, 232	1-121-651-00	Ⓐ	10	16 V	elect
C134, 234	1-108-597-00	Ⓐ	0.056		mylar
C135, 235	1-108-573-00	Ⓑ	0.0056		mylar
C136, 236	1-108-589-00	Ⓑ	0.027		mylar
C137, 237	1-108-597-00	Ⓐ	0.056		mylar
C138, 238	1-121-395-00	Ⓐ	4.7	25 V	elect
C139, 239	1-123-230-00	Ⓑ	2.2	50 V	elect (nonpolarized)
C140, 240	1-121-392-00	Ⓐ	3.3	25 V	elect
C141, 241	1-121-651-00	Ⓐ	10	16 V	elect
C142, 242	1-121-414-00	Ⓑ	100	10 V	elect
C147, 247	1-107-168-00	Ⓐ	91p	500 V	mica
C148, 248	1-141-225-00	Ⓒ	Trimmer		
C149, 249	1-161-375-00	Ⓐ	0.0022		
C150, 250	1-107-097-00	Ⓐ	330p		mica
C151, 251	1-123-307-00	Ⓑ	100	10 V	elect
C152, 252	1-121-415-00	Ⓐ	100	16 V	elect
C154, 254	1-107-159-00	Ⓐ	33p	500 V	silvered mica
C156, 256	1-108-573-00	Ⓑ	0.0056		mylar
C157, 257	1-108-571-00	Ⓑ	0.0047		mylar

⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	Part No.	Descriptin		
C158, 258	1-108-581-00 Ⓑ	0.012		mylar
C159, 259	1-108-569-00 Ⓑ	0.0039		mylar
C160, 260	1-108-585-00 Ⓑ	0.018		mylar
C161, 261	1-108-587-00 Ⓑ	0.022		mylar
C162, 262	1-108-569-00 Ⓑ	0.0039		mylar
C163, 263	1-161-314-00 Ⓐ	180p		
C301–303	1-121-421-00 Ⓑ	220	16 V	elect
C304, 305	1-121-422-00 Ⓑ	220	25 V	elect
C306	1-123-228-00 Ⓑ	1	50 V	elect (nonpolarized)
C307	1-123-330-00 Ⓐ	22	25 V	elect
C308	1-130-336-00 Ⓑ	0.0068	630 V	polyethylene
C309	1-131-237-00 Ⓑ	1.5	25 V	tantalum
C310	1-130-297-00 Ⓐ	0.01	100 V	polyethylene
C311	1-130-303-00 Ⓐ	0.018	100 V	polyethylene
C312	1-121-353-00 Ⓐ	2.2	50 V	elect
C313	1-131-196-00 Ⓑ	2.2	20 V	tantalum
C314	1-161-039-00 Ⓐ	0.001		
C317	1-121-726-00 Ⓐ	0.47	50 V	elect
C318	1-121-391-00 Ⓐ	1	50 V	elect
C320	1-123-333-00 Ⓐ	100	25 V	elect
C801, 802	⚠1-121-657-00 Ⓑ	1000	25 V	elect
C803, 804	⚠1-123-326-00	3300	16 V	elect (US, Canadian model)
	⚠1-123-324-00 Ⓑ	1000	16 V	elect (AEP, UK, E model)
C805	1-121-403-00 Ⓐ	33	16 V	elect
C806	1-123-329-00 Ⓐ	10	25 V	elect
C807	1-123-316-00 Ⓐ	10	16 V	elect
C808	1-123-328-00 Ⓐ	4.7	25 V	elect
C809	1-123-320-00 Ⓐ	100	16 V	elect
C810	1-123-308-00 Ⓐ	220	10 V	elect
C811	1-123-329-00 Ⓐ	10	25 V	elect (AEP, UK, E model)
C812	1-123-316-00 Ⓐ	10	16 V	elect
C813	1-123-352-00 Ⓐ	1	50 V	elect
C814	1-108-591-00 Ⓑ	0.033		mylar
C815, 816	1-123-351-00 Ⓐ	0.47	50 V	elect
C817	1-123-328-00 Ⓐ	4.7	25 V	elect
C818, 819	1-123-351-00 Ⓐ	0.47	50 V	elect
C820	1-123-352-00 Ⓐ	1	50 V	elect
C821, 822	1-161-263-00 Ⓐ	22p		
C824	1-121-403-00 Ⓐ	33	16 V	elect
C825	1-123-353-00 Ⓐ	2.2	50 V	elect
C826, 827	1-108-239-00 Ⓐ	0.01		mylar
C828	1-123-352-00 Ⓐ	1	50 V	elect (US, Canadian model)
C830, 831	1-161-051-00 Ⓐ	0.01		
C1001, 1002	1-123-306-00 Ⓑ	47	10 V	elect
C1003	1-121-409-00 Ⓐ	47	16 V	elect
C1004	1-123-354-00 Ⓐ	3.3	50 V	elect
C1005	1-130-134-00 Ⓑ	0.082	100 V	polyethylene
C1006–1008	1-161-379-00 Ⓐ	0.01		
C1009	1-108-583-00 Ⓐ	0.015		mylar

RESISTORS

All resistors are in ohms. Common ¼W carbon resistors are omitted. Refer to the list on page 27 for their part numbers.

R114, 214	1-244-913-00 Ⓐ	47 k	½ W	carbon
R119, 219	1-244-847-00 Ⓐ	82	½ W	carbon
R123, 223	1-244-885-00 Ⓐ	3.3 k	½ W	carbon
R155, 255, R156, 256	1-244-881-00 Ⓐ	2.2 k	½ W	carbon
R179, 279	1-244-929-00 Ⓐ	220 k	½ W	carbon
R301	⚠1-214-733-00 Ⓐ	1.5 k	¼ W	metal oxide
R302	⚠1-214-723-00 Ⓐ	560	¼ W	metal oxide
R303	⚠1-214-729-00 Ⓐ	1 k	¼ W	metal oxide
R304	⚠1-214-732-00 Ⓐ	1.3 k	¼ W	metal oxide
R312	⚠1-213-134-00 Ⓐ	180	1 W	metal oxide (nonflammable)
R320	⚠1-246-461-00 Ⓐ	330	¼ W	carbon
R321	⚠1-246-455-00 Ⓐ	180	¼ W	carbon
R322	⚠1-212-878-00 Ⓐ	75	¼ W	fusible
R324	1-214-777-00 Ⓐ	100 k	¼ W	metal oxide
R338	⚠1-244-866-00 Ⓐ	510	½ W	carbon
R340, 341	⚠1-212-958-00 Ⓑ	10	½ W	fusible
R342	1-244-866-00 Ⓐ	510	½ W	carbon

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	*Part No.*	*Description*			
R343, 344	⚠1-212-958-00		10	½ W	fusible
R803	1-244-873-00	Ⓐ	1 k	½ W	carbon (AEP, UK, E model)
R814, 815	⚠1-212-857-00	Ⓐ	10	¼ W	fusible
R832	⚠1-213-133-00	Ⓐ	150	1 W	metal oxide (AEP, UK, E model)
R878	⚠1-212-859-00		12		fusible (AEP, UK, E model)
R880	⚠1-217-395-00	Ⓑ	47	¼ W	fusible (AEP, UK, E model)
	⚠1-247-208-00	Ⓐ	47	½ W	carbon (nonflammble) (US, Canadian model)
R1001	1-214-777-00	Ⓐ	100 k	¼ W	metal oxide (1%)
RV101, 201	1-226-295-00	Ⓔ	50k/50k-A, variable; REC LEVEL		
RV102, 202	1-224-646-XX	Ⓑ	22k-B, adjustable; playback level		
RV103, 203	1-224-647-XX	Ⓑ	47k-B, adjustable; record level		
RV1001	1-226-433-00	Ⓐ	50k-B, adjustable; tape speed.		

SWITCHES

S1	1-552-879-00	Ⓒ	Pushbutton, INPUT SELECT
S2	1-552-880-00	Ⓒ	Slide, DOLBY NR
S3	1-552-878-00	Ⓓ	Slide, EQ
S4	1-552-877-00	Ⓒ	Slide, BIAS
S5–11	1-552-919-22	Ⓚ	Block, function
S13	1-552-940-00	Ⓒ	Slide, MEMORY
S14	1-552-520-00	Ⓒ	Slide, timer
S15, 16	1-552-268-00	Ⓑ	Slide, accidental-erasure prevention, cassette
S17	⚠1-552-530-00		Pushbutton, POWER (US, Canadian model)
	⚠1-552-903-00	Ⓓ	Pushbutton, POWER (AEP, UK, E model)

JACKS

CNJ101,201	1-507-525-00	Ⓓ	MIC
CNJ102,202 CNJ103,203	1-507-531-00	Ⓒ	LINE IN, LINE OUT (US, Canadian model)
CNJ102,202 CNJ103,203 CNJ302	1-536-501-21	Ⓓ	LINE IN, LINE OUT, REC/PB (AEP, UK, E model)
CNJ301	1-507-483-00	Ⓒ	HEADPHONES

MISCELLANEOUS

CNJ901	1-561-293-00	Ⓓ	Socket, REMOTE
CP1	⚠1-231-057-31	Ⓑ	Encapsulated Component (E model)
	⚠1-231-326-11		Encapsulated Component (US model)
	⚠1-231-341-00		Encapsulated Component (Canadian model)
CP1, 2	⚠1-130-267-00	Ⓒ	Capacitor, 0.22 250V film (AEP, UK model)
HE402	8-825-724-00	Ⓓ	Head, erase; EF201-36
HRP401	8-825-712-10	Ⓞ	Head, record/playback; PS185-3602A1
LPF101, 201	1-231-388-00	Ⓓ	Filter, low-pass
M1	X-3564-017-0	Ⓚ	Motor Ass'y, capstan
M2	X3564-015-0	Ⓘ	Motor Ass'y, reel
ME101, 201	1-520-341-51	Ⓕ	Meter Unit
PL1	1-518-299-91	Ⓑ	Lamp, cassette
PL2, 3	1-518-351-00	Ⓑ	Lamp, meter
PM1	1-454-222-11	Ⓓ	Solenoid, brake
PM2	1-454-222-21	Ⓓ	Solenoid, head
RY301	1-515-323-00	Ⓖ	Relay
RY302	1-515-297-00	Ⓕ	Relay, reed (AEP, UK, E model)
	⚠1-526-576-21		Voltage Selector (E model)
	⚠1-534-777-00	Ⓓ	Cord, power (UK model)
	⚠1-534-817-XX	Ⓓ	Cord, power (AEP model)
	⚠1-534-986-XX		Cord, power (US, Canadian model)
	⚠1-551-473-31		Cord, power; parallel-blade plug (E model)
	⚠1-551-530-00		Cord, power; euro-plug (E model)
	1-560-064-00	Ⓐ	Pin, connector

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

ACCESSORIES AND PACKING MATERIALS

Part No.	*Description*
X-3701-105-0	Ⓐ Tip Ass'y, head cleaning
1-551-734-11	Ⓓ Cord, connection RK-74A
3-429-126-00	Bag, plastic (Canadian model)
3-561-142-00	Cushion, upper-front (Canadian model)
3-561-143-00	Cushion, upper-rear (Canadian model)
3-561-144-00	Cushion, bottom-right (Canadian model)
3-561-145-00	Cushion, bottom-left (Canadian model)
3-566-148-00	Ⓑ Cushion, upper-front (US, AEP, UK, E model)
3-566-149-00	Ⓑ Cushion, upper-rear (US, AEP, UK, E model)
3-566-150-00	Ⓑ Cushion, bottom-right (US, AEP, UK E model)
3-566-151-00	Ⓑ Cushion, bottom-left (US, AEP, UK E model)
3-566-165-00	Ⓓ Carton (US, AEP UK , E model)
3-566-166-00	Carton (Canadian model)
3-701-630-00	Ⓐ Bag, plastic
3-701-684-00	Ⓐ Card, voltage indication (AEP model)
3-770-991-11	Manual, instruction (AEP, UK, E model)
3-770-991-21	Manual, instruction (US model)
3-770-991-21 3-794-575-31)	Manual, instruction (Canadian model)
3-793-828-11	Ⓐ Caution Card, cassette
3-794-233-21	Ⓐ Separate Sheet, consumer products (US model)
4-818-924-00	Ⓑ Bag, plastic

1/4 WATT CARBON RESISTORS Ⓐ

Note: Circled letter Ⓐ is applicable to European models only.

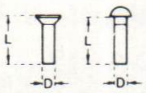
Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00	1.0M	1-246-545-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00	1.1M	1-210-814-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00	1.2M	1-210-815-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-576-00	13k	1-246-500-00	130k	1-246-524-00	1.3M	1-210-816-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-577-00	15k	1-246-501-00	150k	1-246-525-00	1.5M	1-210-817-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-578-00	16k	1-246-502-00	160k	1-246-526-00	1.6M	1-210-818-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-579-00	18k	1-246-503-00	180k	1-246-527-00	1.8M	1-210-819-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-580-00	20k	1-246-504-00	200k	1-246-528-00	2.0M	1-210-820-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-581-00	22k	1-246-505-00	220k	1-246-529-00	2.2M	1-210-821-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-582-00	24k	1-246-506-00	240k	1-246-530-00	2.4M	1-244-754-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-583-00	27k	1-246-507-00	270k	1-246-531-00	2.7M	1-244-755-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-584-00	30k	1-246-508-00	300k	1-246-532-00	3.0M	1-244-756-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-585-00	33k	1-246-509-00	330k	1-246-533-00	3.3M	1-244-757-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-586-00	36k	1-246-510-00	360k	1-246-534-00	3.6M	1-244-758-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-587-00	39k	1-246-511-00	390k	1-246-535-00	3.9M	1-244-759-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00	4.3M	1-244-760-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00	4.7M	1-244-761-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00	5.1M	1-244-762-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00		
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00		
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00		
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00		
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00		
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00		

HARDWARE NOMENCLATURE

Screw:

– P 3 x 10

- *L: Length in mm*
- *D: Diameter in mm*
- *Type of head*
- *Indicated slotted-head only. Unless otherwise indicated, it means cross-recessed head (Phillips type).*



Nut, Washer, Retaining ring:

N 3

- *Diameter of usable screw or shaft*
- *Reference designation*

Reference Designation	Shape	Description	Remarks
		SCREWS	
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		braizer-head screw	

Reference Designation	Shape	Description	Remarks
		SELF-TAPPING SCREWS	
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
		SET SCREWS	
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
		NUT	
N		nut	
		WASHERS	
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
		RETAINING RINGS	
E		retaining ring	
G		grip-type retaining ring	

9-954-822-01

Sony Corporation

79G0539-1
Printed in Japan

TC-K55II

US Model
Canadian Model
AEP Model
UK Model
E Model

'Dolby' and the double-D symbol are the trade marks of Dolby Laboratories. Noise reduction system manufactured under license from Dolby Laboratories.

STEREO CASSETTE DECK

SPECIFICATIONS

GENERAL

Power Requirements:
US, Canadian model
120 V ac, 60 Hz
AEP model
220 V ac, 50/60 Hz
(or 240 V ac adjustable by authorized Sony personnel)
UK model
240 V ac, 50/60 Hz
(or 220 V ac, adjustable by authorized Sony personnel)
E model
110, 120, 220 or 240 V ac adjustable, 50/60 Hz

Power Consumption:
22 W (US, Canadian model)
26 W (AEP, UK model)
29 W (E model)

Dimensions:
Approx. 430 (w) x 130 (h) x 290 (d) mm
17 (w) x 5⅛ (h) x 11½ (d) inches
(US, AEP, UK, E model)
Approx. 460 (w) x 130 (h) x 290 (d) mm
18⅛ (w) x 5⅛ (h) x 11½ (d) inches
(Canadian model)
including projecting parts and controls

Weight:
Approx. 5.2 kg, 11 lb 8 oz
(US, AEP, UK, E model)
Approx. 5.9 kg, 13 lb (Canadian model)

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT A LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UN TRAMÉ ET UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES, LES VUES EXPLOSÉES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DES SUPPLÉMENTS PUBLIÉS PAR SONY.

Tape Transport Mechanism Type	TCM-100V3	
	Specification	Test Equipment
Forward Torque	28–43 g · cm (0.39–0.59 oz · inch)	Sony torque meter CQ-102
Back Tension Torque	2.5–4.5 g · cm (0.04–0.06 oz · inch)	Sony torque meter CQ-102
Pinch Roller Pressure	280–380 g (10–13 oz)	Spring scale or tension gauge

— Continued on page 2 —

SONY®
SERVICE MANUAL

TAPE RECORDER SECTION

Recording System: 4-track 2-channel stereo

Fast-forward and Rewind Time: Approx. 80 sec. (with C-60)

Frequency Response: DOLBY NR OFF

US, Canadian model
- With Type IV cassette (Sony METALLIC)
  20–19,000 Hz
  30–17,000 Hz (±3 dB)
  30–13,000 Hz (±3 dB, 0 VU recording)
- With TYPE III cassette (Sony Fe-Cr)
  20–19,000 Hz
  30–17,000 Hz (±3 dB)
- With TYPE II cassette (Sony EHF)
  20–18,000 Hz
  30–16,000 Hz (±3 dB)
- With TYPE I cassette (Sony HFX)
  20–17,000 Hz

AEP, UK, E model
- With TYPE IV cassette (Sony METALLIC)
  20–19,000 Hz
  30–17,000 Hz (±3 dB)
  30–13,000 Hz (±3 dB, 0 VU recording)
  30–17,000 Hz (DIN)
- With TYPE III cassette (Sony Fe-Cr)
  20–19,000 Hz
  30–17,000 Hz (±3 dB)
  30–17,000 Hz (DIN)
- With TYPE II cassette (Sony CD-α)
  20–18,000 Hz
  30–16,000 Hz (±3 dB)
  30–16,000 Hz (DIN)
- With TYPE I cassette (Sony BHF)
  20–17,000 Hz
  30–15,000 Hz (DIN)

Wow and Flutter: 0.04% WRMS (US, Canadian model)
0.04% WRMS (NAB) } (AEP, UK, E model)
±0.12% (DIN) }

S/N Ratio: DOLBY NR OFF

US, Canadian model
- With TYPE III cassette (Sony Fe-Cr)
  59 dB at peak level
- With TYPE II cassette (Sony EHF)
  57 dB at peak level

AEP, UK, E, model
- With TYPE III cassette (Sony Fe-Cr)
  59 dB at peak level (NAB)
  57 dB (DIN, 1975, rev.)
- With TYPE II cassette (Sony CD-α)
  57 dB at peak level (NAB)

DOLBY NR ON
Improved by 5 dB at 1 kHz, 10 dB above 5 kHz

Total Harmonic Distortion: 1.0% (with Sony Fe-Cr cassette)

Record Bias Frequency: 105 kHz

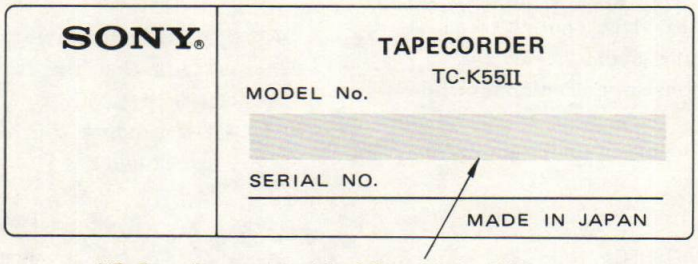
Inputs: MIC (two phone jacks)
sensitivity 0.25mV (–70 dB) for a low-impedance microphone
LINE IN (two phono jacks)
sensitivity 77.5 mV (–20 dB)
input impedance 50 kΩ
REC/PB (connector) . . . (AEP, UK, E model)
input impedance less than 10 kΩ

Outputs: LINE OUT (two phono jacks)
output level 0.435 V (–5 dB) at load impedance 50 kΩ
suitable load impedance more than 10 kΩ
HEADPHONES (binaural jack)
output level –26 dB at load impedance 8 Ω
REC/PB (connector) . . . (AEP, UK, E model)
output impedance less than 10 kΩ

0 dB = 0.775 V

MODEL IDENTIFICATION

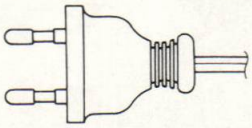
– Specification Label –



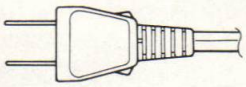
US, Canadian model: AC 120V ~ 60Hz 22W
AEP model: AC 220V ~ 50/60 Hz 26W
UK model: AC 240V ~ 50/60 Hz 26W
E model: AC 110, 120, 220, 240V ~ 50/60 Hz 29W

– Power Cord –

E model: euro-plug **1-551-530-00**



E model: parallel-blade plug 1-551-473-31



SERVICING NOTE

When the top cover is removed the internal photo transistor may pick up stray light and shut the set off.

Handling Precautions for MOS IC IC801 (μPD547C–042)

Generally, the insulation resistance of the oxide layer in MOS IC structures is very high, and the oxide layer is very thin. Because of this, it is possible that the static voltages usually present on clothes and the human body will be enough to generate a potential difference across the insulator, high enough to cause a breakdown of the insulating layer.

The following precautions should be taken while handling these ICs.

(Particular care should be taken under conditions of low humidity.)

Precautions in Replacing MOS ICs

1. Store new ICs by inserting them into a urethane-polyester cushion (which is somewhat conductive), or wrapping it in aluminum foil, so that all the pins are at the same potential.
   (The ICs should be stored in that manner until mounted on the circuit board.)

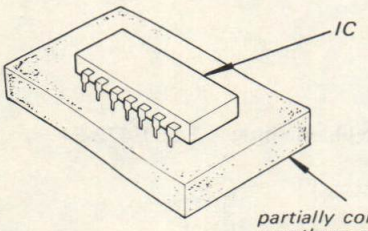


Fig. A

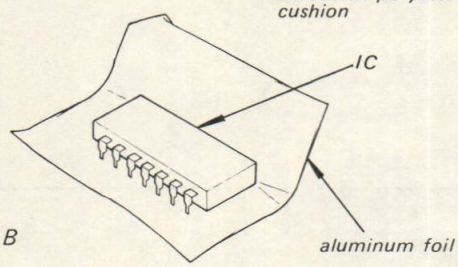


Fig. B

2. Check the soldering iron for possible power-line leakage current. Make sure that there is no leakage path by connecting an ohmmeter to the tip of the soldering iron and the plug as shown in Fig. C. If there is a leakage path, use some other soldering iron.

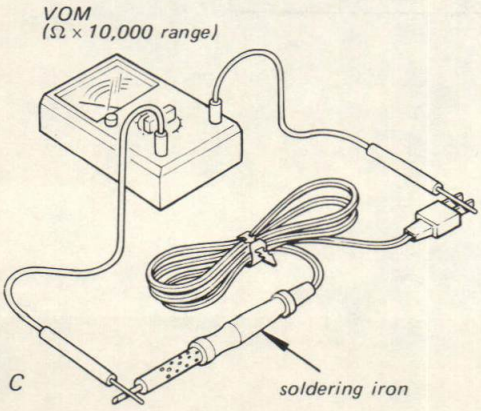


Fig. C

3. Equalize any potential difference between the clothes, the tools in use, the work bench, the set being worked on, and the packaged IC by touching them all in succession with the hands or a conductive wire or tool.

4. The following are effective methods for handling ICs that remove the potential difference across the oxide layer.
   - Use a paper clip modified by soldering in a wire braid insert.

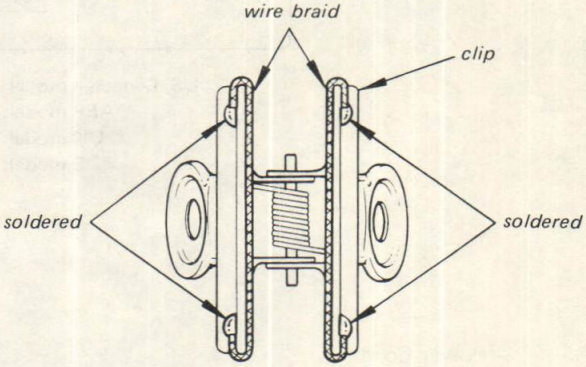


Fig. D Make sure that there is no solder on the inside.

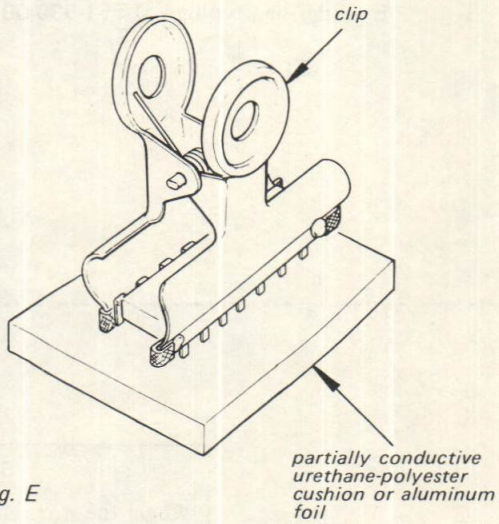


Fig. E

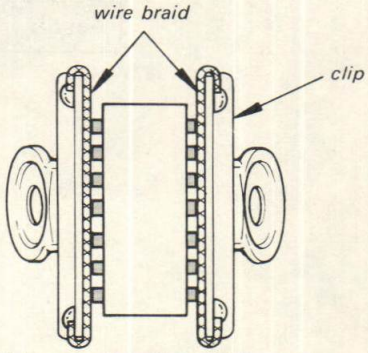


Fig. F Make sure that all the pins are in contact with the wire braid (all the pins will then be at the same potential.).

- Take a short length of fine bare wire and wind it around the IC so that it shorts all the pins of the IC, while it is still in the urethane-polyester cushion or aluminum foil. This ensures that all the pins are at the same potential.

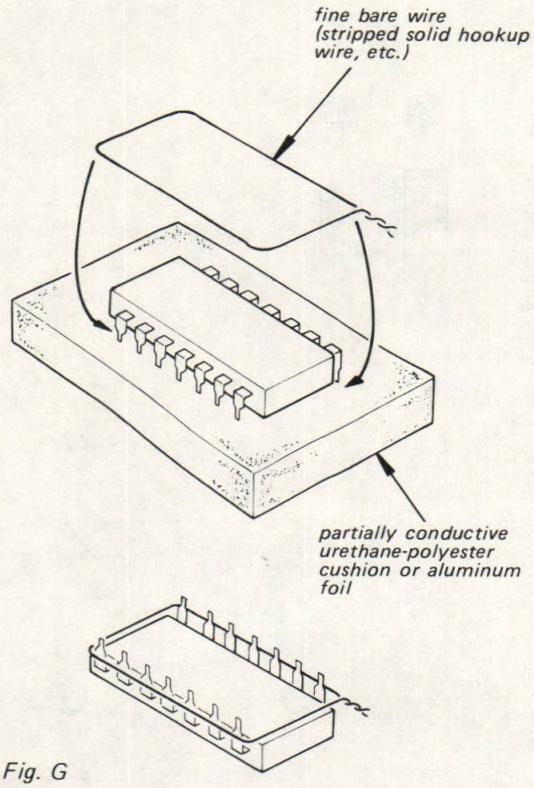


Fig. G

- When it is necessary to handle the IC with the fingers, do not touch any pin, and hold the IC at the ends of its plastic-package case as shown in Fig. H.

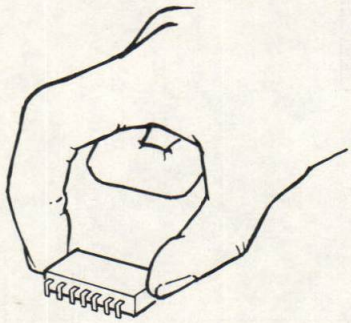


Fig. H

5. Method of Mounting

Insert the IC while holding it with the modified clip, and solder all the pins with the clip still shorting the pins. (Similarly, solder all the pins while the bare shorting wire is still wound around them.). Remove the clip or the bare shorting wire only after all the pins have been soldered.

Precaution while Checking C-MOS ICs

The C-MOS ICs (Complementary MOS) are MOS ICs that have their output sections made up of N-channel and P-channel push-pull stages to increase their speed of operation. If the output terminal of these ICs comes into contact with B+ or B– voltage, then the FET which is ON at that time will either become shorted or open.

This is valid for all the output sections that are connected together by the interconnections. Even the circuits that are physically separated (and not on the same board) can be destroyed simultaneously.

Example:

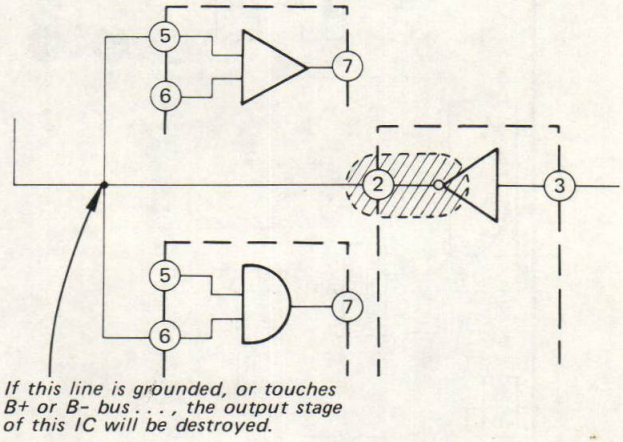
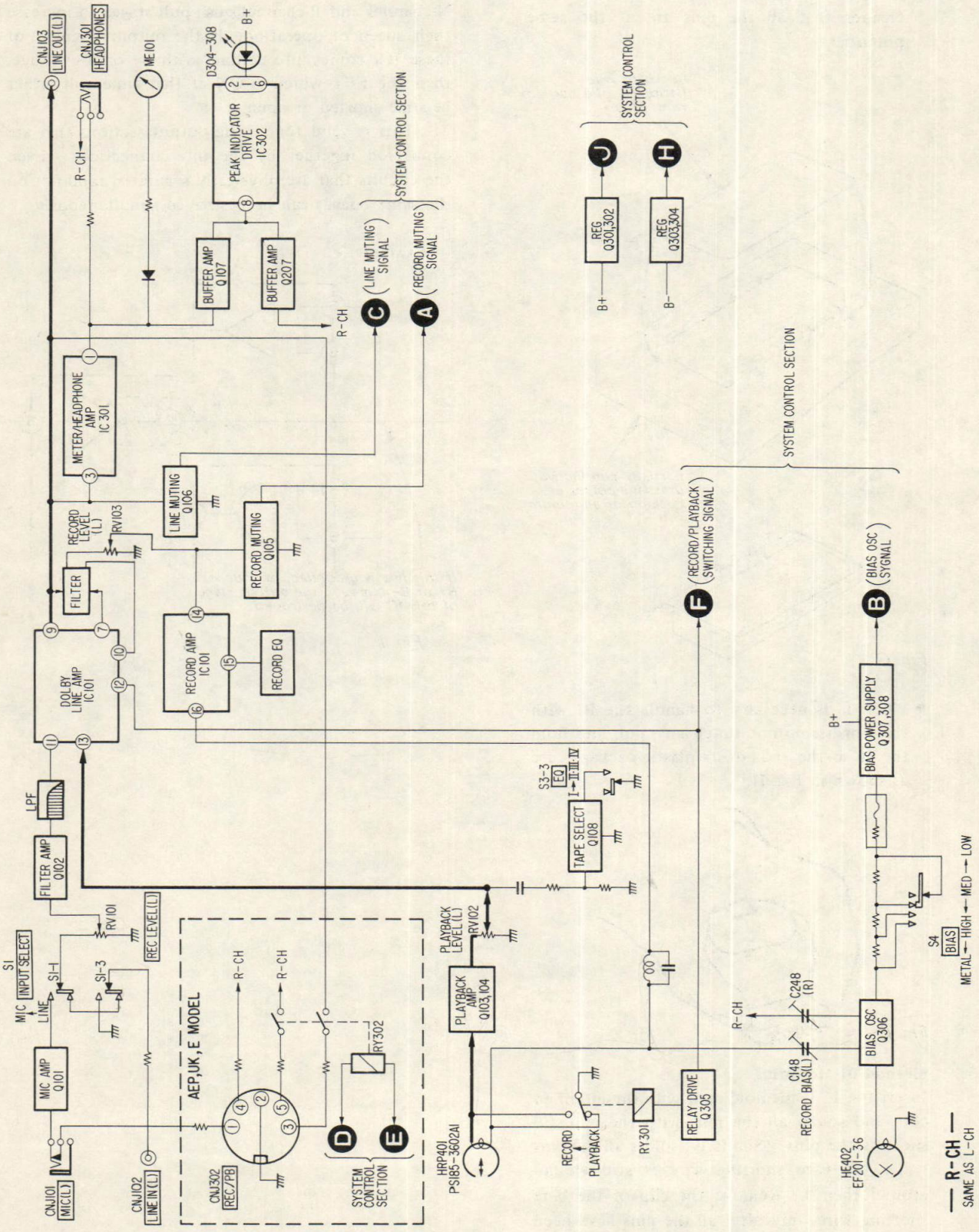


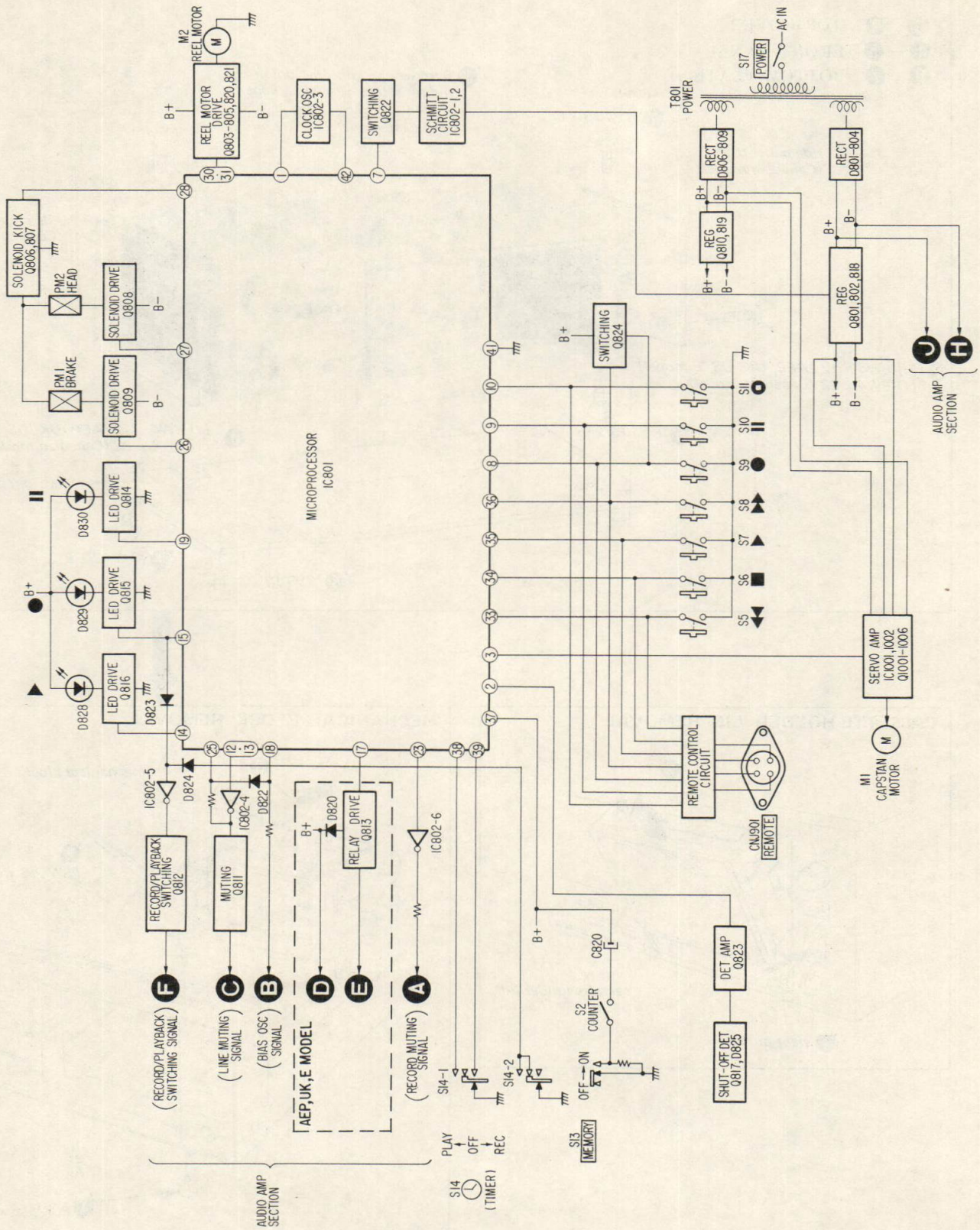
Fig. I

SECTION 1
OUTLINE

1-1. BLOCK DIAGRAM – Audio Amp Section –



— System Control Section —

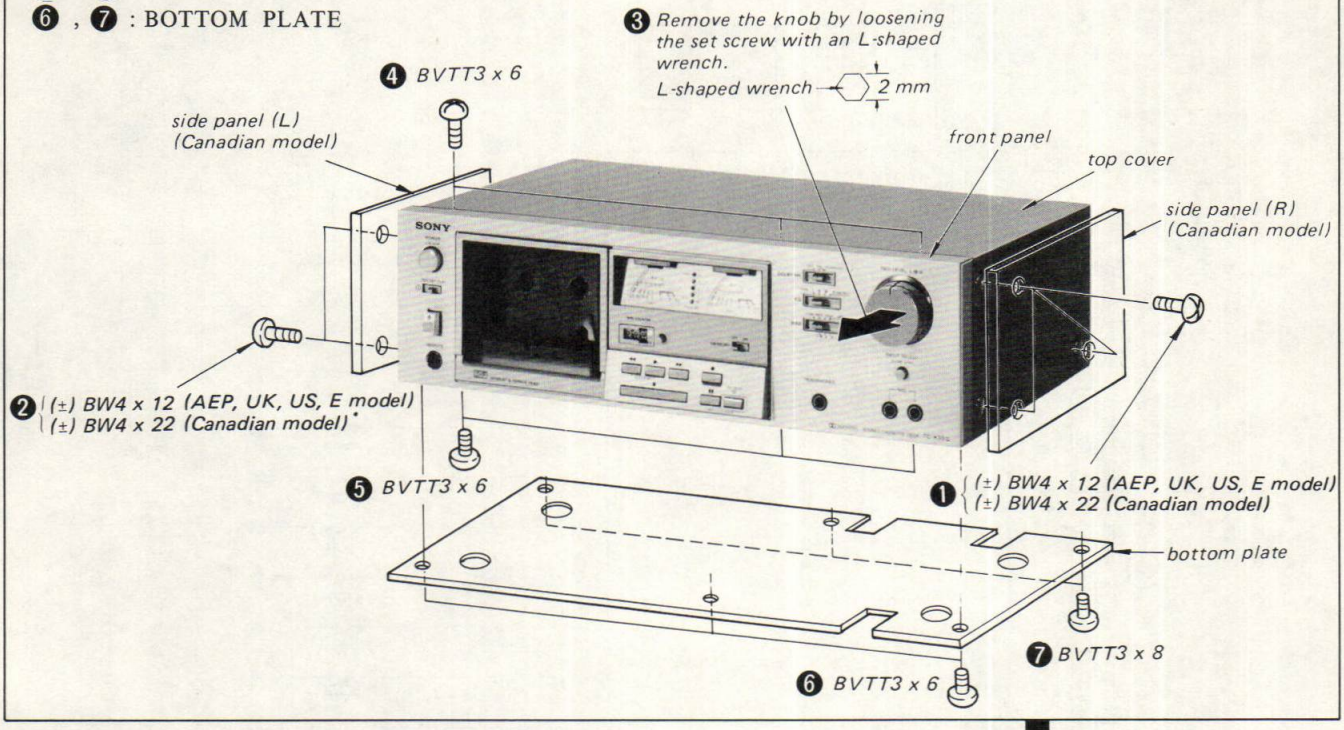


SECTION 2
DISASSEMBLY

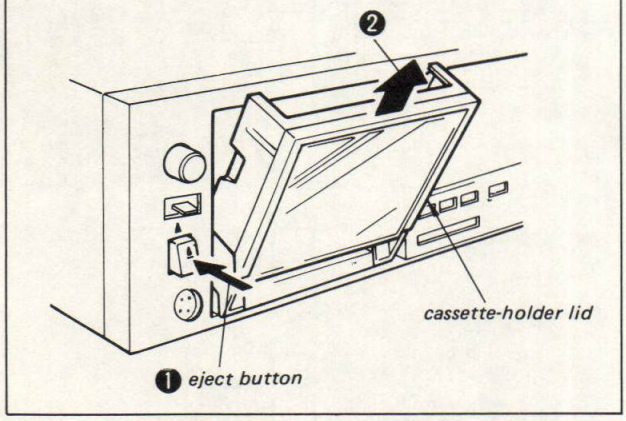
- Follow the disassembly procedure in the numerical order given.

TOP COVER/FRONT PANEL/BOTTOM PLATE REMOVAL

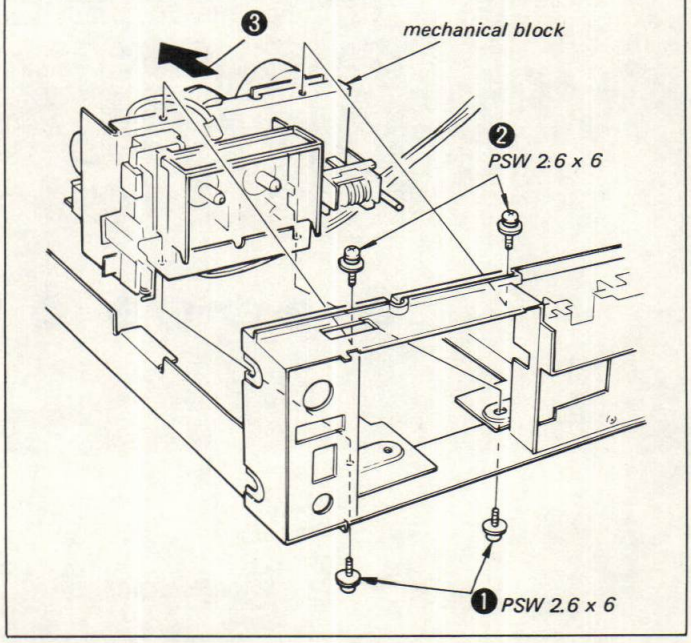
❶, ❷ : TOP COVER
❶ – ❺ : FRONT PANEL
❻, ❼ : BOTTOM PLATE



CASSETTE-HOLDER LID REMOVAL



MECHANICAL BLOCK REMOVAL



SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:

   record/playback head — pinch roller
   erase head — rubber belts
   capstan — idlers

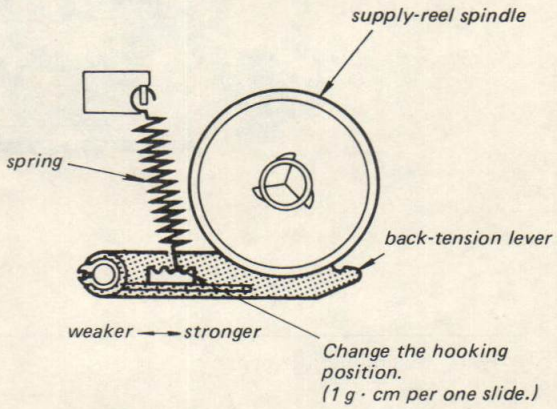
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

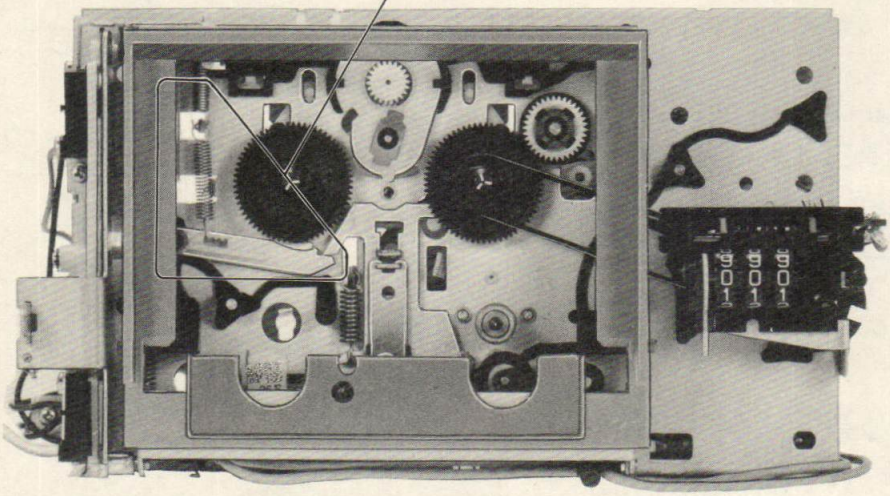
Torque Measurement and Back Tension Torque Adjustment

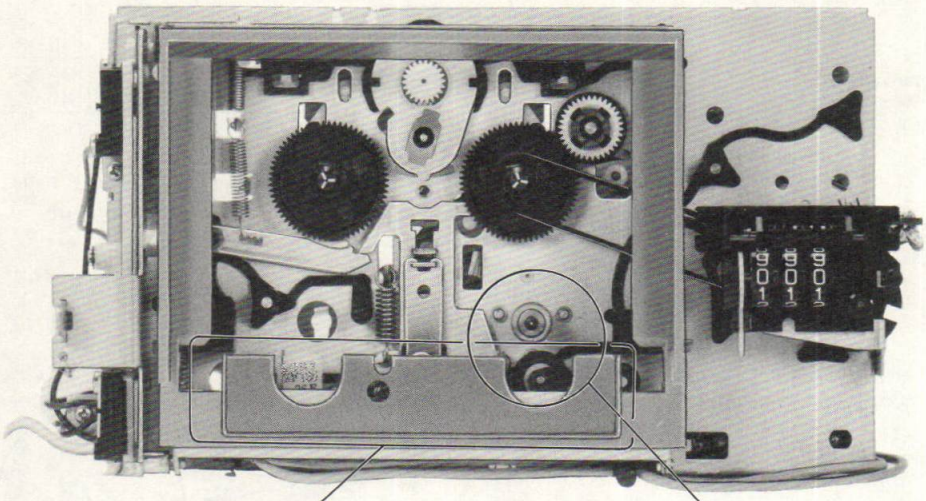
1.

Torque	Torque meter	Meter reading
Forward	CQ-102	28–43 g · cm (0.39–0.59 oz : inch)
Back tension	CQ-102	2.5–4.5 g · cm (0.04–0.06 oz · inch)

2. If the specified back-tension torque is not obtained, change the hooking position.

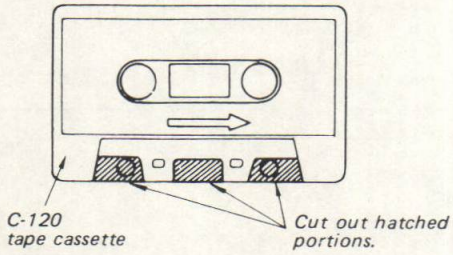




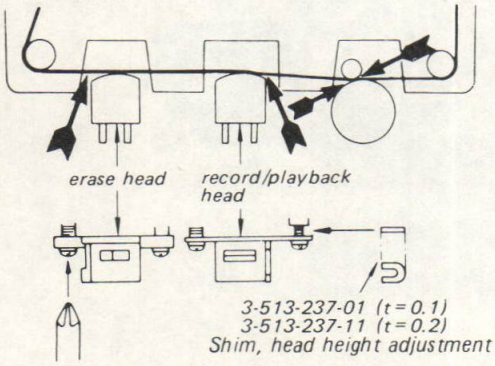


Head Height Adjustment

1. Prepare an adjustment cassette as shown below.

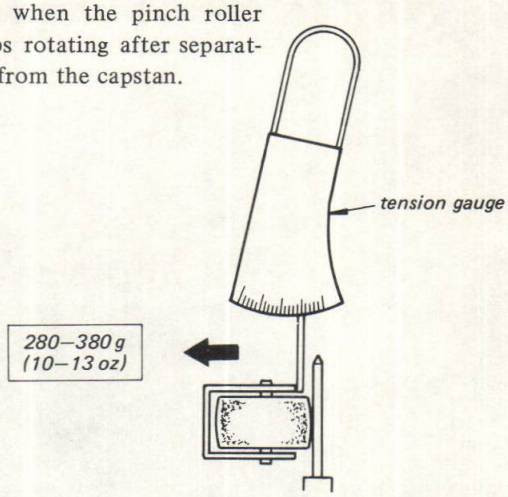


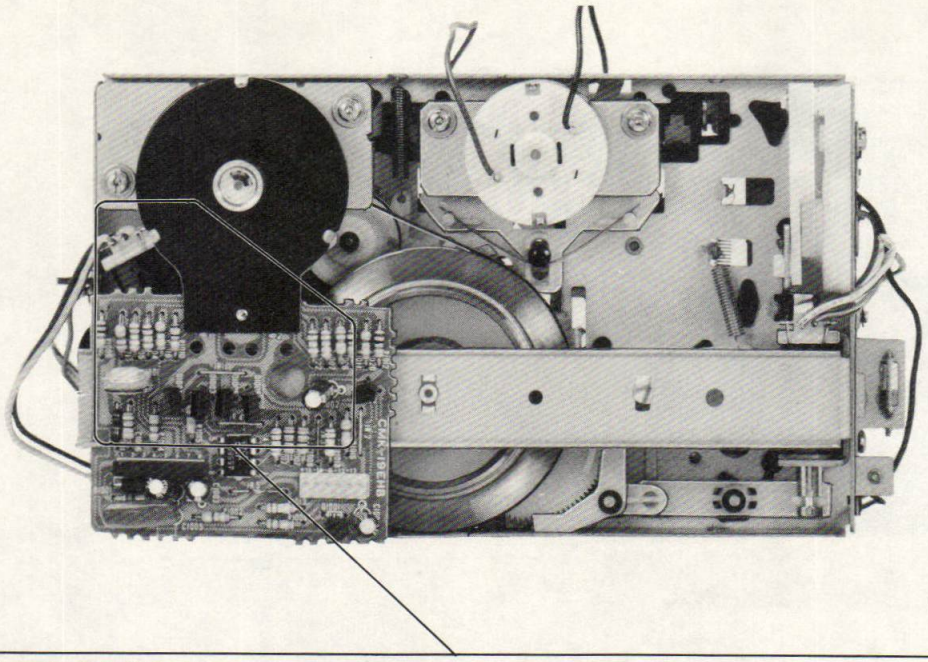
2. In playback mode and viewing from the front, adjust the head heights to eliminate tape curl and tape twist at portions shwon by arrow.



Pinch Roller Pressure Measurement
– Forward Mode –

Slowly pull the pinch roller and read the tension gauge just when the pinch roller stops rotating after separating from the capstan.





Brake Solenoid (PM1) Position Adjustment

– Stop Mode –

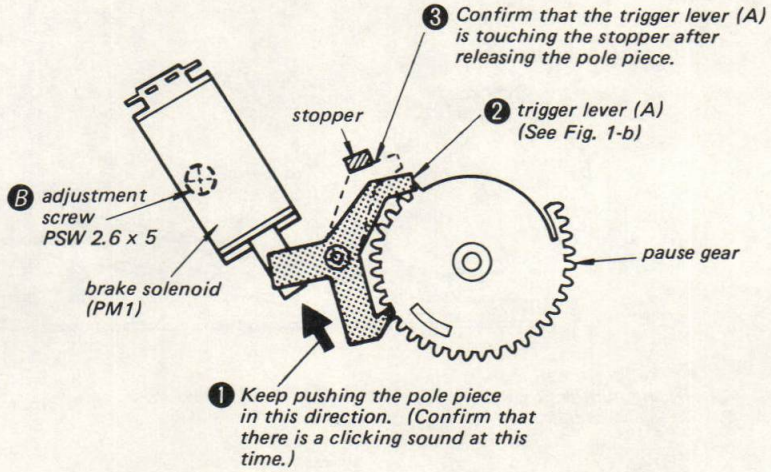


Fig. 1-a.

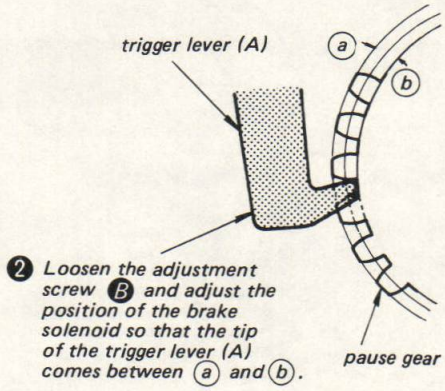
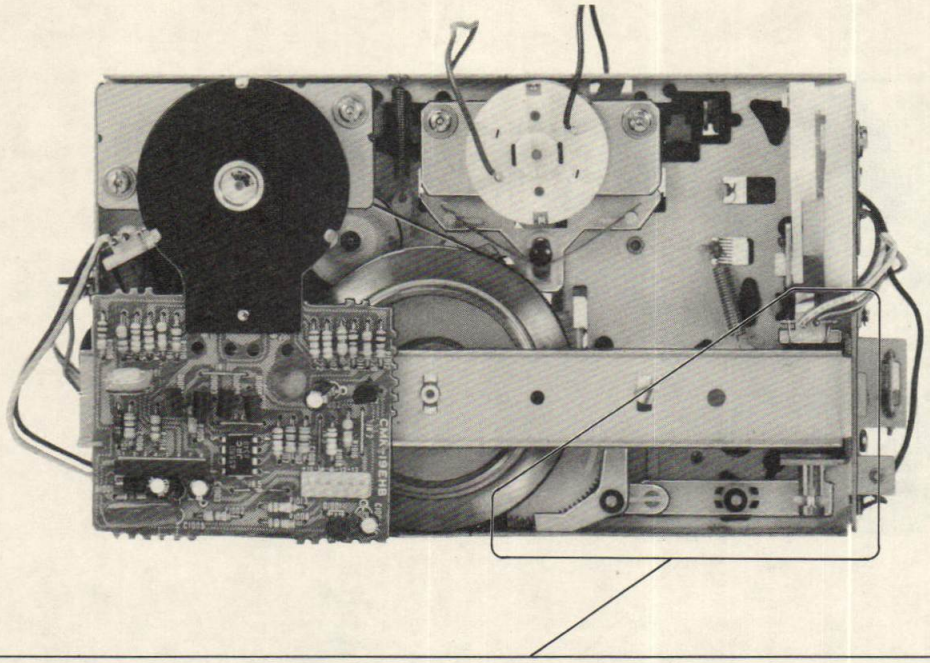


Fig. 1-b.



Head Solenoid (PM2) Position Adjustment
– Stop Mode –

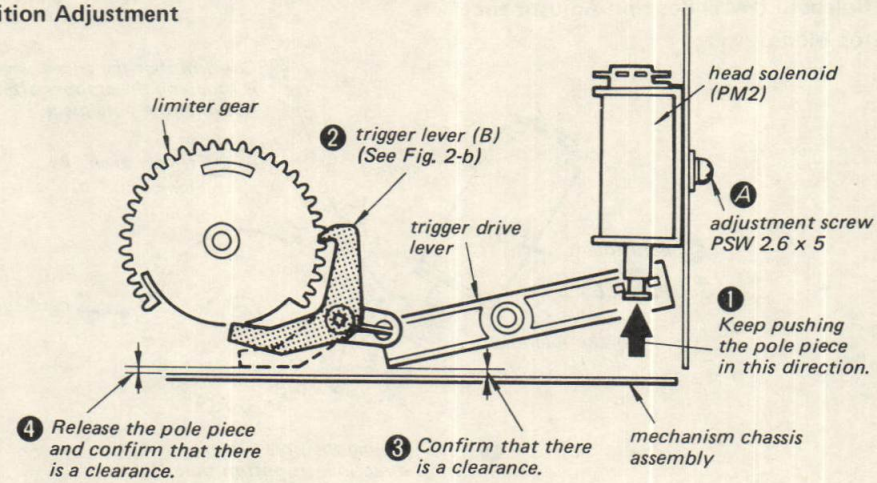


Fig. 2-a

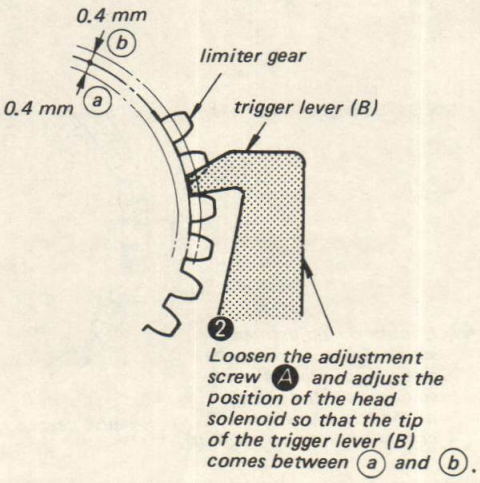
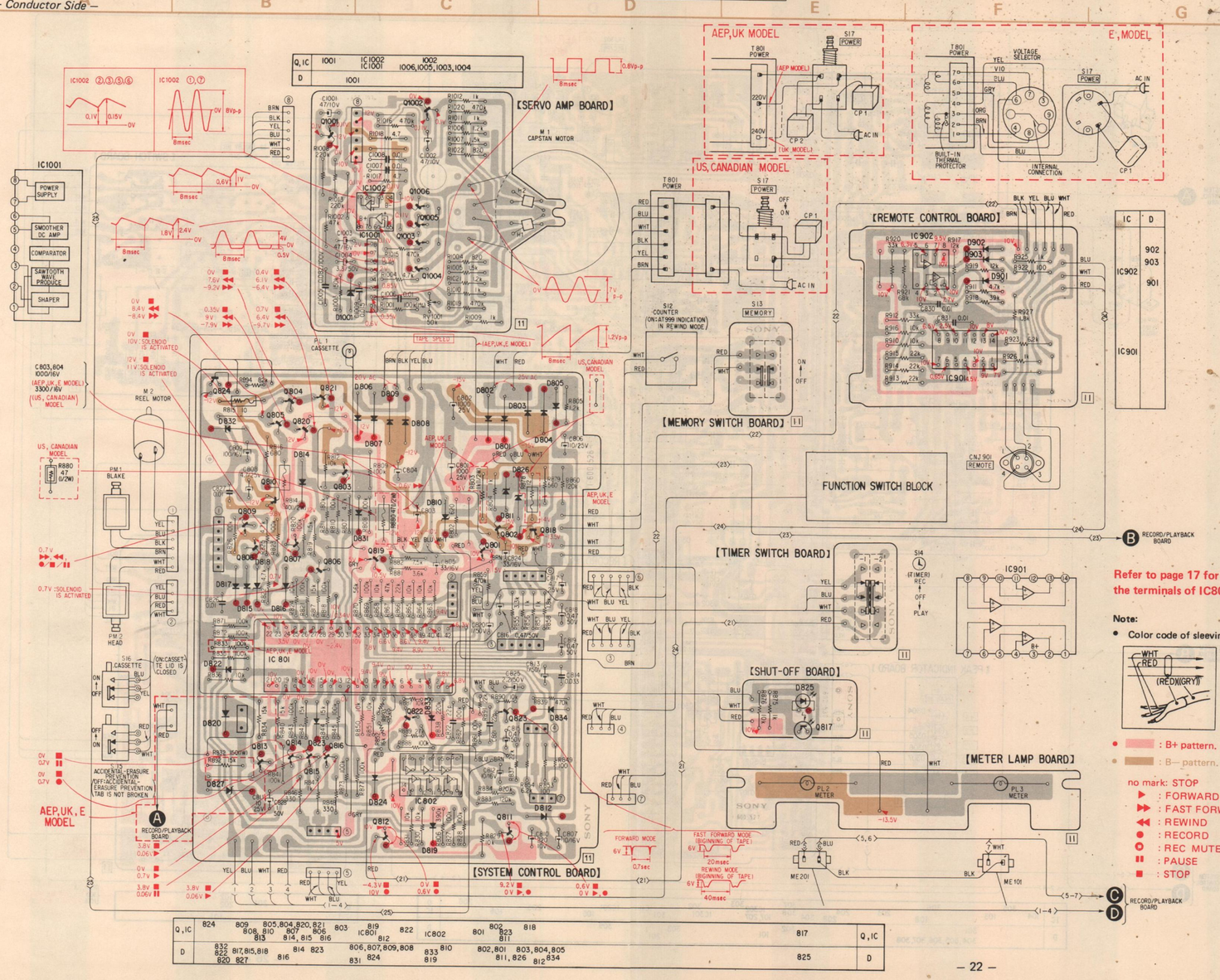


Fig. 2-b

4-2. MOUNTING DIAGRAM – System Control Section –

– Conductor Side –



Refer to page 17 for voltages and waveforms at the terminals of IC801.

Note:

- Color code of sleeving over the end of the jacket.

- : B+ pattern.
- : B– pattern.

no mark: STOP
▶ : FORWARD
▶▶ : FAST FORWARD
◀◀ : REWIND
● : RECORD
○ : REC MUTE
❚❚ : PAUSE
■ : STOP

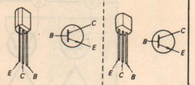
- **Replacement Semiconductors**

For replacement, use semiconductors except in ( ).

Q801: 2SD414

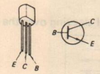
Q802, 811, 812: 2SA1027R (2SA1015)
Q824: 2SA1027R (2SA1026)

Q803, 806
Q813,(AEP, UK, E model)
Q814–816, 820 : 2SC1364 (2SC1815)

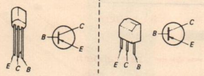


Q804, 821: 2SA952
Q818: 2SA684 (2SA773)

Q805, 808, 809: 2SC2001

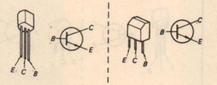


Q807, 810
Q1004, 1006: 2SA684 (2SB564)



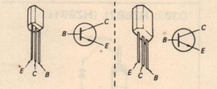
Q817: PH103-1M (PH103)

Q819: 2SC1475 (2SC1213A)
Q1003, 1005: 2SC1474 (2SD471)



Q822, 823: 2SC1364

Q1001, 1002: 2SC1364 (2SC634A)



D801–804
D806–809
D814
D805, 812, 815
D817, 819
D820 (AEP, UK, E model) : 10E2
D822–824
D831, 833
D834, 901–903 : 1S1555
D834, 901–903 : 1S1555 (1T40)

D810, 811, 816
D818, 832
D826: HZ15-2L
D1001: HZ6B2L (HZ6B1L) : HZ11B2L (HZ11B2)

D825: SR110

D827 (AEP, UK, E model) : EQB01-12Z (EQB01-12)

D828: SEL1331G

D829: SEL1112R

D830: SEL1741Y

IC801: μPD547C-042

IC802: MSM4069
IC901: μPC339C

IC1001: CX069

IC902: μPC4558C
IC1002: μPC4558C (μPC4558)

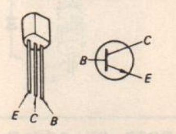
4-3. MOUNTING DIAGRAM – Audio Amp Section –

– Conductor Side –

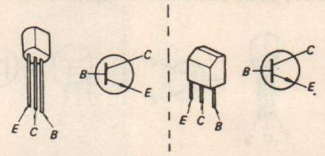
- **Replacement Semiconductors**

For replacement, use semiconductors except in (   ).

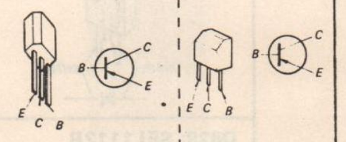
Q101, 102, 104
Q201, 202, 204) 2SC1345
Q106, 206: 2SC2001



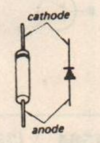
Q306: 2SC1475 (2SC1213A)



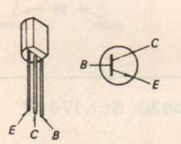
Q103, 203: 2SA1027R (2SA836)



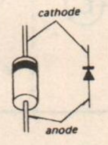
D101, 201: 1T22AM (1T22)
D301, 302: 1S1555



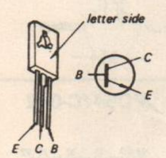
Q105,107,108
Q205, 207, 208 } : 2SC1364
Q305, 308



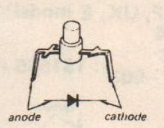
D303: HZ6B2L (HZ6B1L)



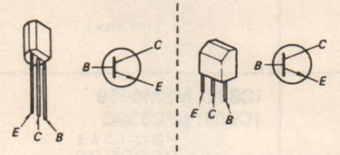
Q301: 2SD414



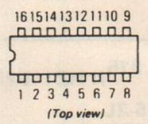
D304–306: SEL1112R
D307, 308: SEL1312G



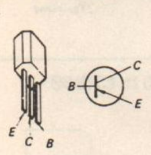
Q302: 2SC1364 (2SC458C)



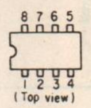
IC101, 201: CX174



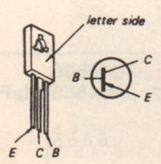
Q303: 2SA1027R (2SA844)
Q307: 2SA1027R (2SA1026)



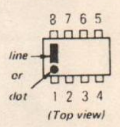
IC301: μPC4557C



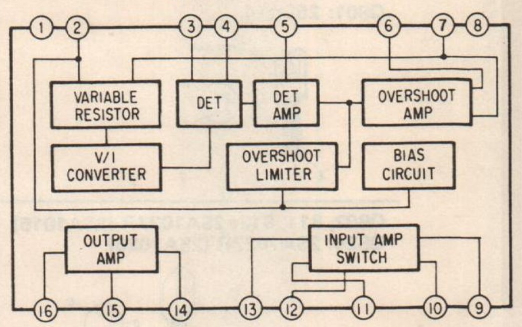
Q304: 2SB548



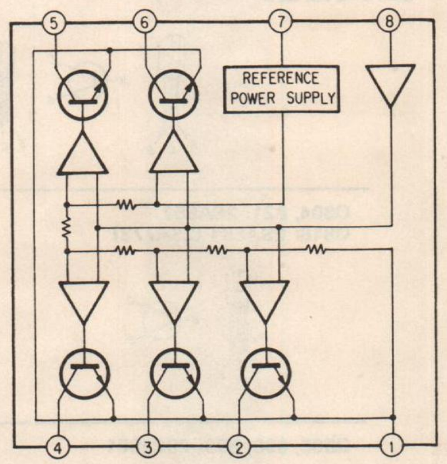
IC302: TL489CP (TL489C)



IC101

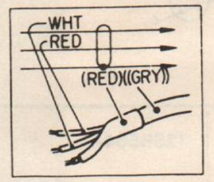


IC302



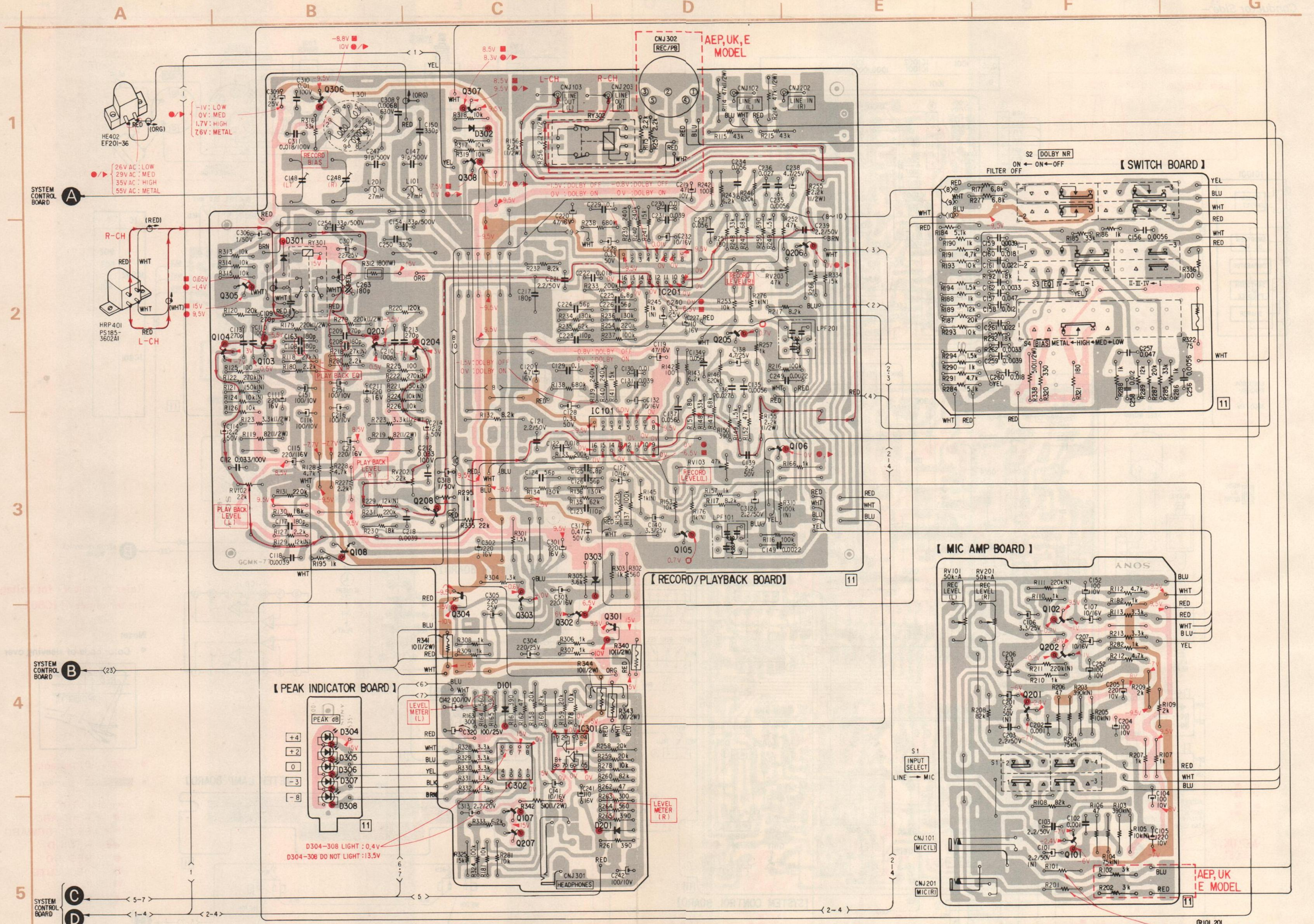
Note:

- Color code of sleeving over the end of the jacket.



- ▨ : B+ pattern
- ▨ : B– pattern
- —▶— : signal path
  - —·→ : L-CH
  - —··→ : R-CH

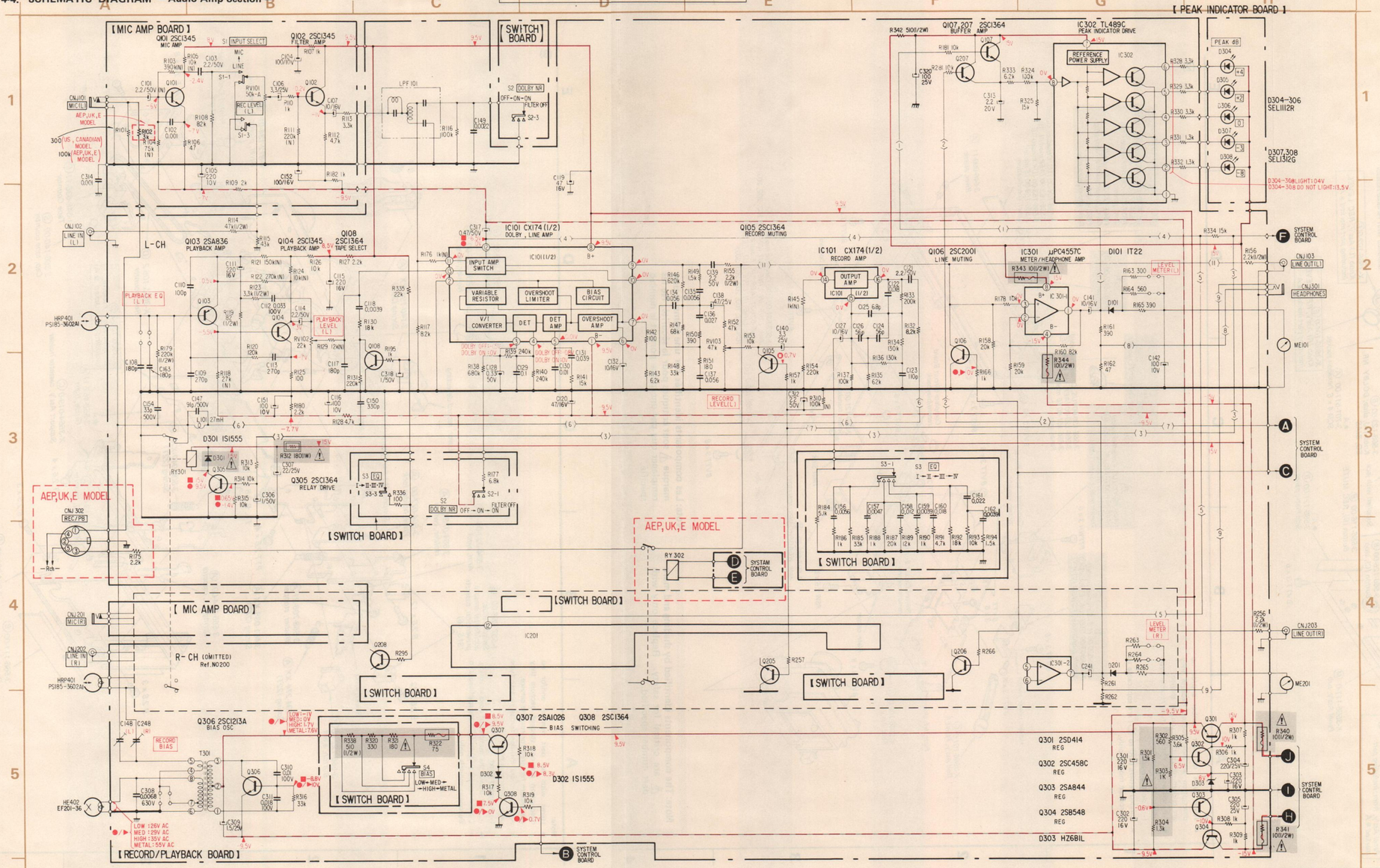
no mark: STOP
▶ : FORWARD
▶▶ : FAST FORWARD
◀◀ : REWIND
● : RECORD
○ : REC MUTE
❚❚ : PAUSE
■ : STOP



Q IC	104 305 103 306 108 203 204 208 304 307 308 IC302 303 107,207 302 IC301 301 IC101 IC201 105 205 106 206	Q IC
D	301 304,305,306,307,308 302 101 303 201 309	D

Q	201 102 202 101

R101, 201
300 (US, CANADIAN MODEL)
100k (AEP, UK, E MODEL)



Note:

- Components for right channel have same values as for left channel. Reference numbers are coded from 200.
- All capacitors are in μF unless otherwise noted. pF = μμF 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ : 1000 Ω, MΩ = 1000 kΩ
- : fusible resistor.
- : nonflammable resistor.
- (N) : low-noise.
- : B+ bus.
- : B− bus.
- : panel designation.
- : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no signal conditions with a VOM (20 kΩ/V).
  no mark: STOP
  - ▶ : FORWARD
  - ▶▶ : FAST FORWARD
  - ◀◀ : REWIND
  - ● : RECORD
  - ○ : REC MUTE
  - ❚❚ : PAUSE
  - ■ : STOP
- AC voltage readings in the bias oscillator circuit are taken with a VTVM.
- Voltage variations may be noted due to normal production tolerances.
- Switch

Ref. No.	Switch	Position
S1-1 to 1-4	INPUT SELECT	LINE
S2-1 to 2-4	DOLBY NR	OFF
S3-1 to 3-3	EQ	I
S4	BIAS	MED

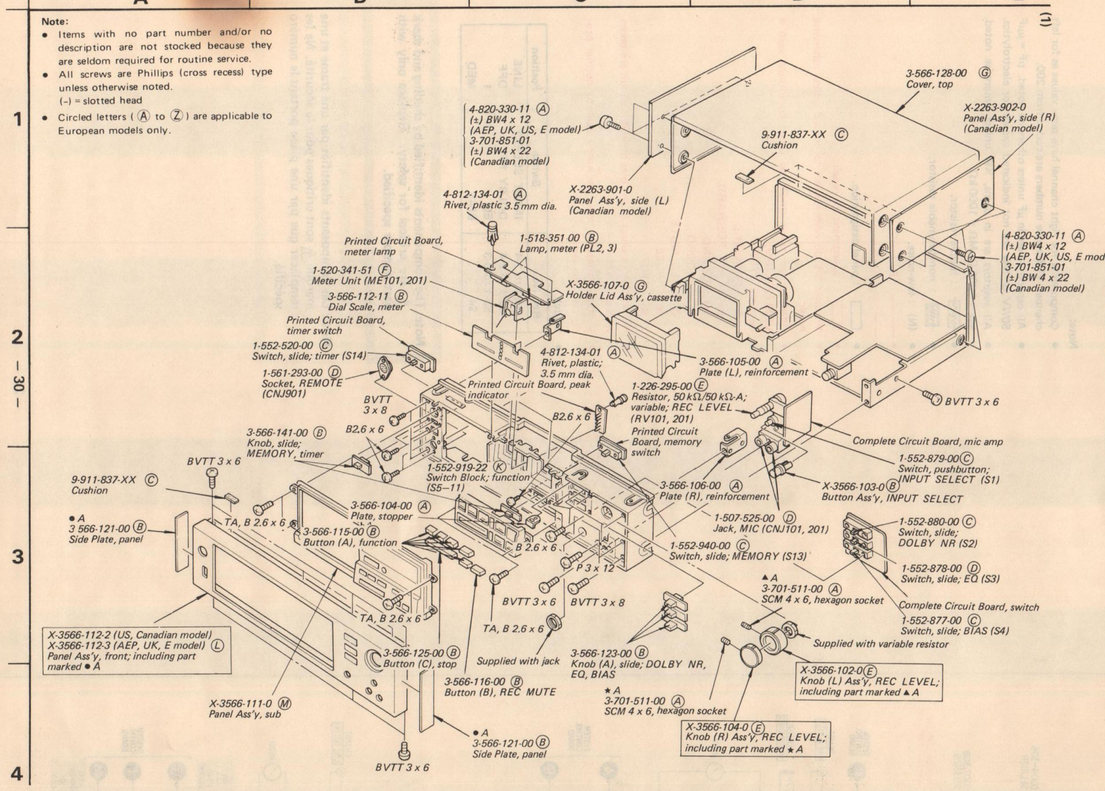
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

SECTION 5 EXPLODED VIEWS

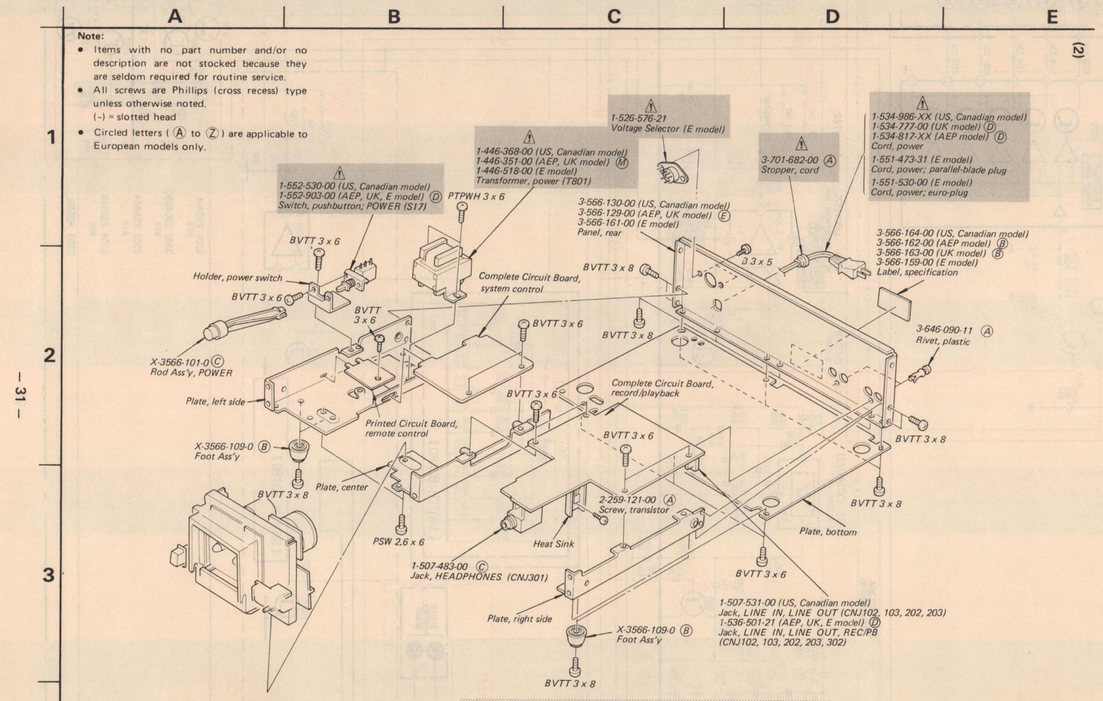
(1)

Note:
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted. (–) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.



(2)

Note:
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted. (–) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

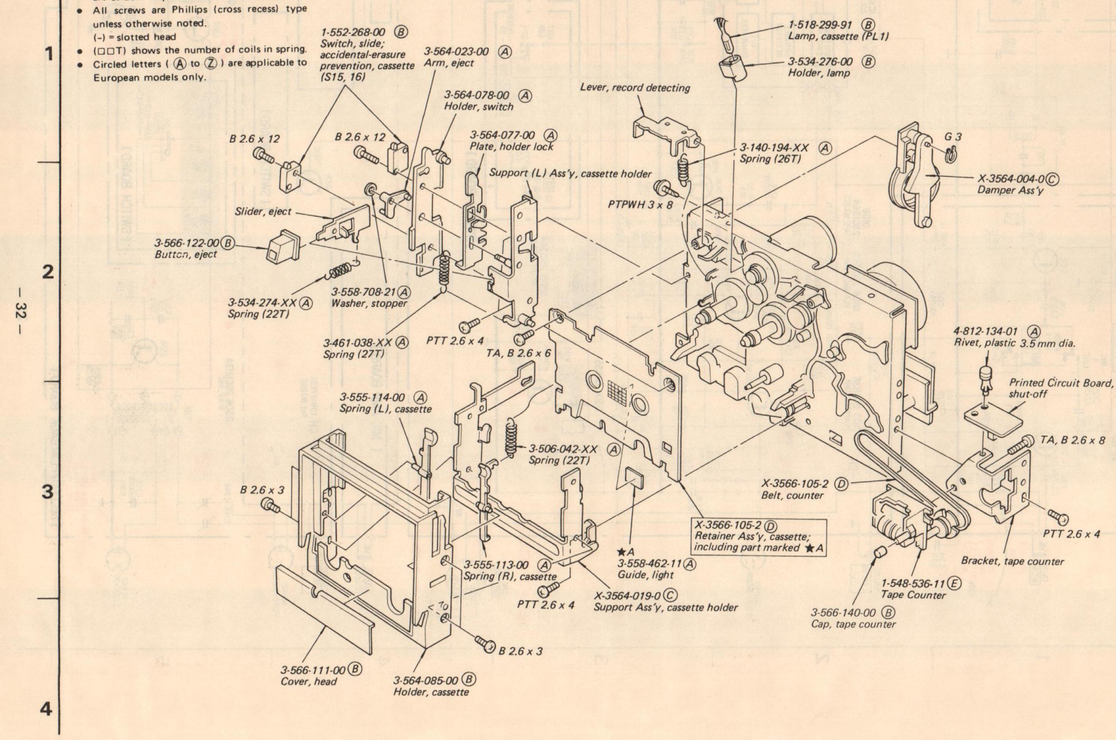


Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

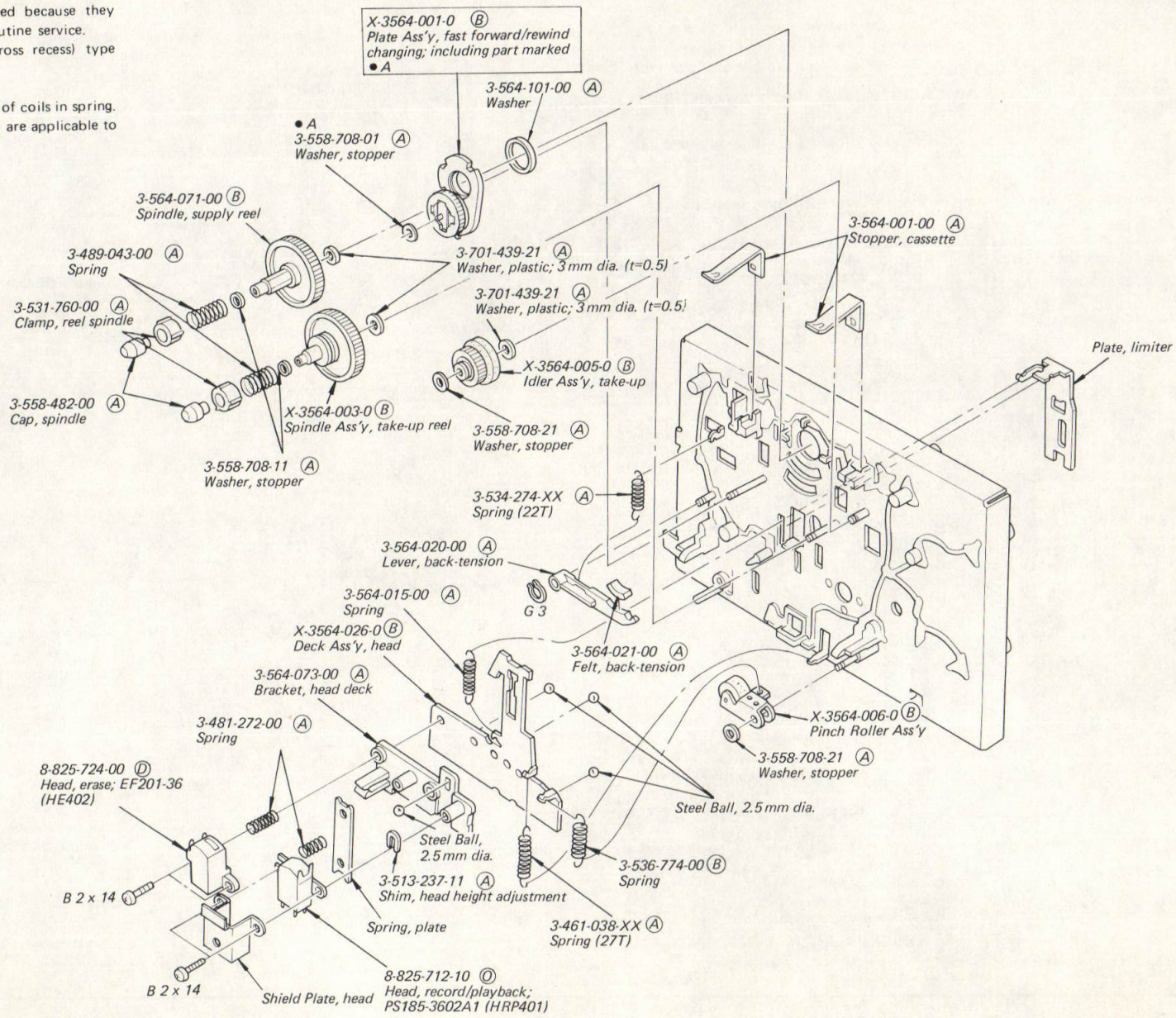
(3)

Note:
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted. (–) = slotted head
- (□□T) shows the number of coils in spring.
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.



Note:

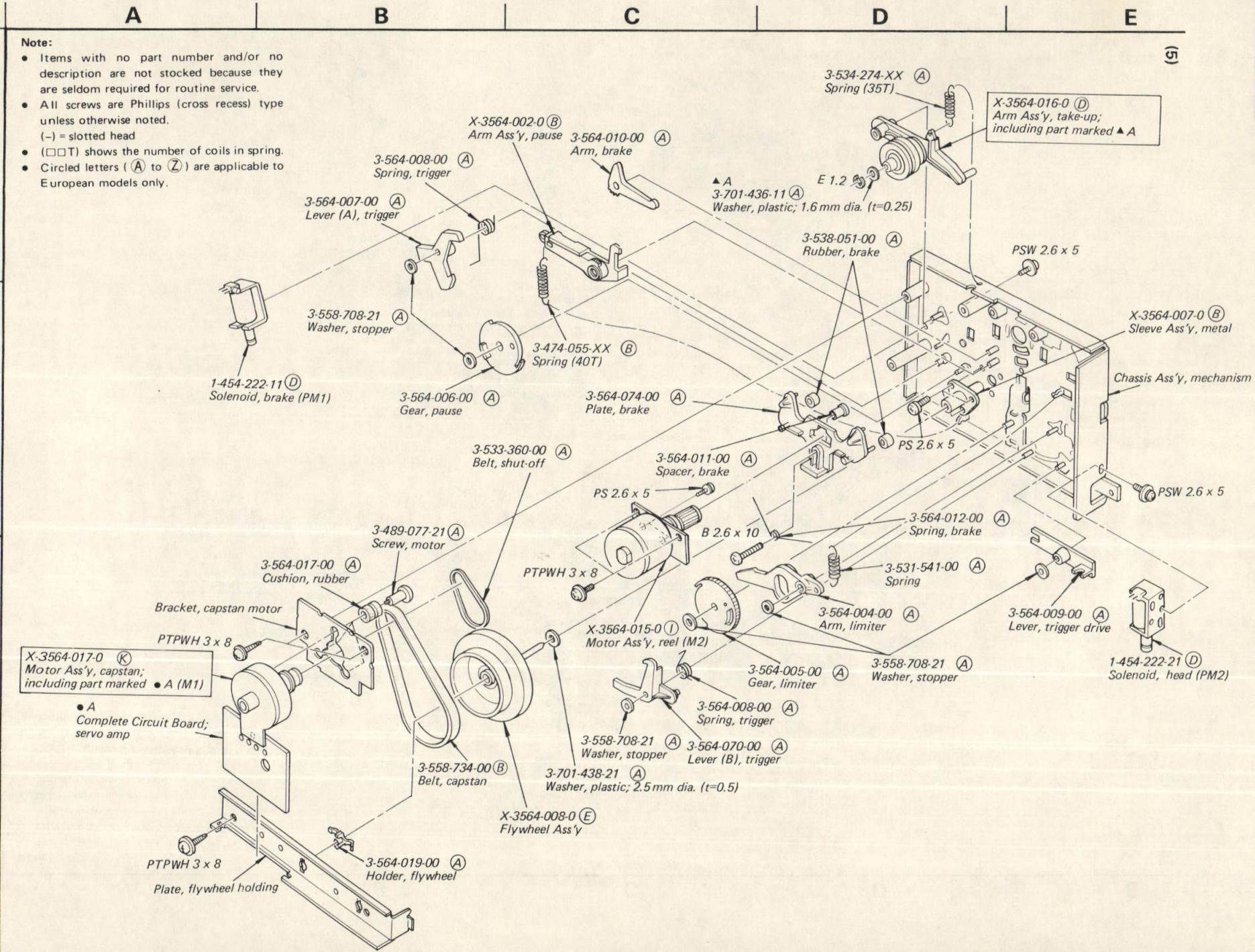
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- (□□T) shows the number of coils in spring.
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.



(5)

Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- (□□T) shows the number of coils in spring.
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.



SECTION 6
ELECTRICAL PARTS LIST

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	Part No.	Description
		SEMICONDUCTORS
		Transistors
Q101, 201, Q102, 202	8-729-334-58	Ⓑ 2SC1345
⇒Q103, 203	8-729-612-77	Ⓑ 2SA1027R
Q104, 204	8-729-334-58	Ⓑ 2SC1345
Q105, 205	8-729-663-47	Ⓒ 2SC1364
Q106, 206	8-729-100-13	Ⓑ 2SC2001
Q107, 207, Q108, 208	8-729-663-47	Ⓒ 2SC1364
Q301	8-729-141-43	Ⓑ 2SD414
⇒Q302	8-729-663-47	Ⓒ 2SC1364
⇒Q303	8-729-612-77	Ⓑ 2SA1027R
Q304	8-729-154-83	Ⓑ 2SB548
Q305	8-729-663-47	Ⓒ 2SC1364
⇒Q306	8-760-413-10	Ⓑ 2SC1475
Q307	8-729-612-77	Ⓑ 2SA1027R
Q308	8-729-663-47	Ⓒ 2SC1364
Q801	8-729-141-43	Ⓑ 2SD414
⇒Q802	8-729-612-77	Ⓑ 2SA1027R
⇒Q803	8-729-663-47	Ⓒ 2SC1364
Q804	8-729-195-23	Ⓑ 2SA952
Q805	8-729-100-13	Ⓑ 2SC2001
⇒Q806	8-729-663-47	Ⓒ 2SC1364
⇒Q807	8-729-468-43	Ⓒ 2SA684
Q808, 809	8-729-100-13	Ⓑ 2SC2001
⇒Q810	8-729-468-43	Ⓒ 2SA684
⇒Q811, 812	8-729-612-77	Ⓑ 2SA1027R
⇒Q813	8-729-663-47	Ⓒ 2SC1364 (AEP, UK, E model)
⇒Q814–816	8-729-663-47	Ⓒ 2SC1364
⇒Q817	8-729-101-03	Ⓒ PH103-1M
⇒Q818	8-729-468-43	Ⓒ 2SA684
⇒Q819	8-760-413-10	Ⓑ 2SC1475
⇒Q820	8-729-663-47	Ⓒ 2SC1364
Q821	8-729-195-23	Ⓑ 2SA952
Q822, 823	8-729-663-47	Ⓒ 2SC1364
⇒Q824	8-729-612-77	Ⓑ 2SA1027R
⇒Q1001,1002	8-729-663-47	Ⓒ 2SC1364
⇒Q1003	8-760-335-10	Ⓑ 2SC1474
⇒Q1004	8-729-468-43	Ⓒ 2SA684
⇒Q1005	8-760-335-10	Ⓒ 2SC1474
⇒Q1006	8-729-468-43	Ⓒ 2SA684
		ICs
IC101, 201	8-759-101-74	Ⓖ CX174
IC301	8-759-145-57	Ⓓ μPC4557C
⇒IC302	8-759-904-89	Ⓓ TL489CP
IC801	8-759-147-42	Ⓚ μPD547C-042
IC802	8-759-904-69	Ⓒ MSM4069
IC901	8-759-133-90	Ⓕ μPC339C
IC902	8-759-145-58	Ⓓ μPC4558C
IC1001	8-750-690-00	Ⓓ CX069
⇒IC1002	8-759-145-58	Ⓓ μPC4558C
		Diodes
⇒D101, 201	8-719-422-21	Ⓑ 1T22AM
D301	⚠8-719-815-55	Ⓑ 1S1555
D302	8-719-815-55	Ⓑ 1S1555
⇒D303	8-719-910-65	Ⓑ HZ6B2L
D304–306	8-719-311-12	Ⓑ SEL1112R
D307, 308	8-719-313-12	Ⓑ SEL1312G
D801–804	⚠8-719-200-02	Ⓑ 10E2
D805	8-719-815-55	Ⓑ 1S1555
D806–809	⚠8-719-200-02	Ⓑ 10E2
⇒D810, 811	8-719-910-15	Ⓑ HZ11B2L
D812	8-719-815-55	Ⓑ 1S1555
D814	8-719-200-02	Ⓑ 10E2
D815	⚠8-719-815-55	Ⓑ 1S1555
⇒D816	8-719-910-15	Ⓑ HZ11B2L
D817	⚠8-719-815-55	Ⓑ 1S1555
⇒D818	8-719-910-15	Ⓑ HZ11B2L
D819	8-719-815-55	Ⓑ 1S1555
D820	8-719-815-55	Ⓑ 1S1555 (AEP, UK model)
D822–824	8-719-815-55	Ⓑ 1S1555
D825	8-719-101-11	Ⓑ SR110

⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	Part No.	Description
D826	8-719-910-52 Ⓑ	HZ15-2L
⇒ D827	8-719-930-12 Ⓑ	EQB01-12Z (AEP, UK, E model)
D828	8-719-313-31 Ⓑ	SEL1331G
D829	8-719-311-12 Ⓑ	SEL1112R
D830	8-719-314-41 Ⓑ	SEL1741Y
⇒ D831	8-719-815-55 Ⓑ	1S1555
⇒ D832	8-719-910-15 Ⓑ	HZ11B2L
⇒ D833,834 D901–903	8-719-815-55 Ⓑ	1S1555
⇒ D1001	8-719-910-65 Ⓑ	HZ6B2L

COILS

L101, 201	1-407-211-XX Ⓑ	27 mH, microinductor

TRANSFORMERS

T301	1-433-132-11 Ⓑ	Osc
T801	⚠1-446-351-00 Ⓜ	Power (AEP, UK model)
	⚠1-446-368-00	Power (US, Canadian model)
	⚠1-446-518-00	Power (E model)

CAPACITORS

All capacitors are in μF and ceramic unless otherwise noted. 50WV or less are not indicated except for electrolytics and tantalum. p : μμF, elect : electrolytic.

C101, 201	1-121-450-00	Ⓐ	2.2	50 V	elect
C102, 202	1-161-323-00	Ⓐ	0.001		
C103, 203	1-121-230-00	Ⓑ	2.2	50 V	elect (nonpolarized)
C104, 204	1-123-307-00	Ⓑ	100	10 V	elect
C105, 205	1-123-308-00	Ⓐ	220	10 V	elect
C106, 206	1-121-392-00	Ⓐ	3.3	25 V	elect
C107, 207	1-121-651-00	Ⓐ	10	16 V	elect
C108, 208	1-161-314-00	Ⓐ	180p		
C109, 209	1-161-316-00	Ⓐ	270p		
C110, 210	1-161-271-00	Ⓐ	100p		
C111, 211	1-121-421-00	Ⓑ	220	16 V	elect
C112, 212	1-130-309-00	Ⓐ	0.033	100 V	polyethylene
C113, 213	1-161-316-00	Ⓐ	270p		
C114, 214	1-121-450-00	Ⓐ	2.2	50 V	elect
C115, 215	1-121-421-00	Ⓑ	220	16 V	elect
C116, 216	1-121-414-00	Ⓐ	100	10 V	elect
C117, 217	1-161-314-00	Ⓐ	180p		
C118, 218	1-108-569-00	Ⓑ	0.0039		
C119, 219 C120, 220	1-121-409-00	Ⓐ	47	16 V	elect
C121, 221	1-123-230-00		2.2	50 V	elect (nonpolarized)
C122, 222	1-108-585-00	Ⓑ	0.018		mylar
C123, 223	1-161-347-00	Ⓐ	110p		
C124, 224	1-161-268-00	Ⓐ	56p		
C125, 225	1-161-257-00	Ⓐ	6.8p		
C126, 226	1-161-268-00	Ⓐ	56p		
C127, 227	1-121-651-00	Ⓐ	10	16 V	elect
C128, 228	1-123-286-00	Ⓐ	0.33	50 V	elect
C129, 229	1-108-251-00	Ⓑ	0.1		mylar
C130, 230	1-108-239-00	Ⓐ	0.01		mylar
C131, 231	1-108-360-00	Ⓐ	0.039		mylar
C132, 232	1-121-651-00	Ⓐ	10	16 V	elect
C134, 234	1-108-597-00	Ⓐ	0.056		mylar
C135, 235	1-108-573-00	Ⓑ	0.0056		mylar
C136, 236	1-108-589-00	Ⓑ	0.027		mylar
C137, 237	1-108-597-00	Ⓐ	0.056		mylar
C138, 238	1-121-395-00	Ⓐ	4.7	25 V	elect
C139, 239	1-123-230-00	Ⓑ	2.2	50 V	elect (nonpolarized)
C140, 240	1-121-392-00	Ⓐ	3.3	25 V	elect
C141, 241	1-121-651-00	Ⓐ	10	16 V	elect
C142, 242	1-121-414-00	Ⓑ	100	10 V	elect
C147, 247	1-107-168-00	Ⓐ	91p	500 V	mica
C148, 248	1-141-225-00	Ⓒ	Trimmer		
C149, 249	1-161-375-00	Ⓐ	0.0022		
C150, 250	1-107-097-00	Ⓐ	330p		mica
C151, 251	1-123-307-00	Ⓑ	100	10 V	elect
C152, 252	1-121-415-00	Ⓐ	100	16 V	elect
C154, 254	1-107-159-00	Ⓐ	33p	500 V	silvered mica
C156, 256	1-108-573-00	Ⓑ	0.0056		mylar
C157, 257	1-108-571-00	Ⓑ	0.0047		mylar

⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	Part No.	Description		
C158, 258	1-108-581-00 Ⓑ	0.012		mylar
C159, 259	1-108-569-00 Ⓑ	0.0039		mylar
C160, 260	1-108-585-00 Ⓑ	0.018		mylar
C161, 261	1-108-587-00 Ⓑ	0.022		mylar
C162, 262	1-108-569-00 Ⓑ	0.0039		mylar
C163, 263	1-161-314-00 Ⓐ	180p		
C301–303	1-121-421-00 Ⓑ	220	16 V	elect
C304, 305	1-121-422-00 Ⓑ	220	25 V	elect
C306	1-123-228-00 Ⓑ	1	50 V	elect (nonpolarized)
C307	1-123-330-00 Ⓐ	22	25 V	elect
C308	1-130-336-00 Ⓑ	0.0068	630 V	polyethylene
C309	1-131-237-00 Ⓑ	1.5	25 V	tantalum
C310	1-130-297-00 Ⓐ	0.01	100 V	polyethylene
C311	1-130-303-00 Ⓐ	0.018	100 V	polyethylene
C312	1-121-353-00 Ⓐ	2.2	50 V	elect
C313	1-131-196-00 Ⓑ	2.2	20 V	tantalum
C314	1-161-039-00 Ⓐ	0.001		
C317	1-121-726-00 Ⓐ	0.47	50 V	elect
C318	1-121-391-00 Ⓐ	1	50 V	elect
C320	1-123-333-00 Ⓐ	100	25 V	elect
C801, 802	⚠1-121-657-00 Ⓑ	1000	25 V	elect
C803, 804	⚠1-123-326-00	3300	16 V	elect (US, Canadian model)
	⚠1-123-324-00 Ⓑ	1000	16 V	elect (AEP, UK, E model)
C805	1-121-403-00 Ⓐ	33	16 V	elect
C806	1-123-329-00 Ⓐ	10	25 V	elect
C807	1-123-316-00 Ⓐ	10	16 V	elect
C808	1-123-328-00 Ⓐ	4.7	25 V	elect
C809	1-123-320-00 Ⓐ	100	16 V	elect
C810	1-123-308-00 Ⓐ	220	10 V	elect
C811	1-123-329-00 Ⓐ	10	25 V	elect (AEP, UK, E model)
C812	1-123-316-00 Ⓐ	10	16 V	elect
C813	1-123-352-00 Ⓐ	1	50 V	elect
C814	1-108-591-00 Ⓑ	0.033		mylar
C815, 816	1-123-351-00 Ⓐ	0.47	50 V	elect
C817	1-123-328-00 Ⓐ	4.7	25 V	elect
C818, 819	1-123-351-00 Ⓐ	0.47	50 V	elect
C820	1-123-352-00 Ⓐ	1	50 V	elect
C821, 822	1-161-263-00 Ⓐ	22p		
C824	1-121-403-00 Ⓐ	33	16 V	elect
C825	1-123-353-00 Ⓐ	2.2	50 V	elect
C826, 827	1-108-239-00 Ⓐ	0.01		mylar
C828	1-123-352-00 Ⓐ	1	50 V	elect (US, Canadian model)
C830, 831	1-161-051-00 Ⓐ	0.01		
C1001, 1002	1-123-306-00 Ⓑ	47	10 V	elect
C1003	1-121-409-00 Ⓐ	47	16 V	elect
C1004	1-123-354-00 Ⓐ	3.3	50 V	elect
C1005	1-130-134-00 Ⓑ	0.082	100 V	polyethylene
C1006–1008	1-161-379-00 Ⓐ	0.01		
C1009	1-108-583-00 Ⓐ	0.015		mylar

RESISTORS

All resistors are in ohms. Common ¼W carbon resistors are omitted. Refer to the list on page 27 for their part numbers.

Ref. No.	Part No.	Description		
R114, 214	1-244-913-00 Ⓐ	47 k	½ W	carbon
R119, 219	1-244-847-00 Ⓐ	82	½ W	carbon
R123, 223	1-244-885-00 Ⓐ	3.3 k	½ W	carbon
R155, 255 R156, 256	1-244-881-00 Ⓐ	2.2 k	½ W	carbon
R179, 279	1-244-929-00 Ⓐ	220 k	½ W	carbon
R301	⚠1-214-733-00 Ⓐ	1.5 k	¼ W	metal oxide
R302	⚠1-214-723-00 Ⓐ	560	¼ W	metal oxide
R303	⚠1-214-729-00 Ⓐ	1 k	¼ W	metal oxide
R304	⚠1-214-732-00 Ⓐ	1.3 k	¼ W	metal oxide
R312	⚠1-213-134-00 Ⓐ	180	1 W	metal oxide (nonflammable)
R320	⚠1-246-461-00 Ⓐ	330	¼ W	carbon
R321	⚠1-246-455-00 Ⓐ	180	¼ W	carbon
R322	⚠1-212-878-00 Ⓐ	75	¼ W	fusible
R324	1-214-777-00 Ⓐ	100 k	¼ W	metal oxide
R338	⚠1-244-866-00 Ⓐ	510	½ W	carbon
R340, 341	⚠1-212-958-00 Ⓑ	10	½ W	fusible
R342	1-244-866-00 Ⓐ	510	½ W	carbon

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	*Part No.*	*Description*			
R343, 344	⚠1-212-958-00		10	½ W	fusible
R803	1-244-873-00	Ⓐ	1 k	½ W	carbon (AEP, UK, E model)
R814, 815	⚠1-212-857-00	Ⓐ	10	¼ W	fusible
R832	⚠1-213-133-00	Ⓐ	150	1 W	metal oxide (AEP, UK, E model)
R878	⚠1-212-859-00		12		fusible (AEP, UK, E model)
R880	⚠1-217-395-00	Ⓑ	47	¼ W	fusible (AEP, UK, E model)
	⚠1-247-208-00		47	½ W	carbon (nonflammble) (US, Canadian model)
R1001	1-214-777-00	Ⓐ	100 k	¼ W	metal oxide (1%)
RV101, 201	1-226-295-00	Ⓔ	50k/50k-A, variable; REC LEVEL		
RV102, 202	1-224-646-XX	Ⓑ	22k-B, adjustable; playback level		
RV103, 203	1-224-647-XX	Ⓑ	47k-B, adjustable; record level		
RV1001	1-226-433-00	Ⓐ	50k-B, adjustable; tape speed		

SWITCHES

S1	1-552-879-00	Ⓒ	Pushbutton, INPUT SELECT
S2	1-552-880-00	Ⓒ	Slide, DOLBY NR
S3	1-552-878-00	Ⓓ	Slide, EQ
S4	1-552-877-00	Ⓒ	Slide, BIAS
S5–11	1-552-919-22	Ⓚ	Block, function
S13	1-552-940-00	Ⓒ	Slide, MEMORY
S14	1-552-520-00	Ⓒ	Slide, timer
S15, 16	1-552-268-00	Ⓑ	Slide, accidental-erasure prevention, cassette
S17	⚠1-552-530-00		Pushbutton, POWER (US, Canadian model)
	⚠1-552-903-00	Ⓓ	Pushbutton, POWER (AEP, UK, E model)

JACKS

CNJ101,201	1-507-525-00	Ⓓ	MIC
CNJ102,202 CNJ103,203	1-507-531-00	Ⓒ	LINE IN, LINE OUT (US, Canadian model)
CNJ102,202 CNJ103,203 CNJ302	1-536-501-21	Ⓓ	LINE IN, LINE OUT, REC/PB (AEP, UK, E model)
CNJ301	1-507-483-00	Ⓒ	HEADPHONES

MISCELLANEOUS

CNJ901	1-561-293-00	Ⓓ	Socket, REMOTE
CP1	⚠1-231-057-31	Ⓑ	Encapsulated Component (E model)
	⚠1-231-326-11		Encapsulated Component (US model)
	⚠1-231-341-00		Encapsulated Component (Canadian model)
CP1, 2	⚠1-130-267-00	Ⓒ	Capacitor, 0.22 250V film (AEP, UK model)
HE402	8-825-724-00	Ⓓ	Head, erase; EF201-36
HRP401	8-825-712-10	Ⓞ	Head, record/playback; PS185-3602A1
LPF101, 201	1-231-388-00	Ⓓ	Filter, low-pass
M1	X-3564-017-0	Ⓚ	Motor Ass'y, capstan
M2	X3564-015-0	Ⓘ	Motor Ass'y, reel
ME101, 201	1-520-341-51	Ⓕ	Meter Unit
PL1	1-518-299-91	Ⓑ	Lamp, cassette
PL2, 3	1-518-351-00	Ⓑ	Lamp, meter
PM1	1-454-222-11	Ⓓ	Solenoid, brake
PM2	1-454-222-21	Ⓓ	Solenoid, head
RY301	1-515-323-00	Ⓖ	Relay
RY302	1-515-297-00	Ⓕ	Relay, reed (AEP, UK, E model)
	⚠1-526-576-21		Voltage Selector (E model)
	⚠1-534-777-00	Ⓓ	Cord, power (UK model)
	⚠1-534-817-XX	Ⓓ	Cord, power (AEP model)
	⚠1-534-986-XX		Cord, power (US, Canadian model)
	⚠1-551-473-31		Cord, power; parallel-blade plug (E model)
	⚠1-551-530-00		Cord, power; euro-plug (E model)
	1-560-064-00	Ⓐ	Pin, connector

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

3-2. ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in this service manual. The adjustments should be performed for both L-CH and R-CH.

- Set the BIAS and EQ switches according to the tape as follows.

Tape	BIAS switch	EQ switch
CS-10	MED	TYPE I
CS-25	HIGH	TYPE II
CS-30	MED	TYPE III
CS-40	METAL	TYPE IV

- Switches and controls should be set as follows unless otherwise specified.

DOLBY NR switch:	OFF
EQ switch:	TYPE I
BIAS switch:	MED
TIMER [ ] switch:	OFF

- Standard Record:

Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

Standard Input Level

	MIC	LINE IN	REC/PB (AEP, UK and E model)
source impedance	300 Ω	10 kΩ	100 kΩ
input level	0.77 mV (−60 dB)	0.25 V (−10 dB)	17 mV (−33 dB)

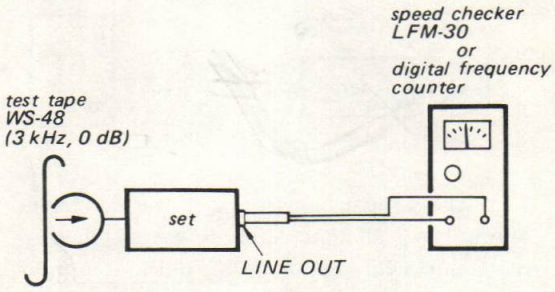
Standard Output Level

	LINE OUT	HEAD-PHONES	REC/PB (AEP, UK and E model)
load impedance	47 kΩ	8 Ω	50 kΩ
output level	0.44 V (−5 dB)	39 mV (−26 dB)	0.44 V (−5 dB)

Tape Speed Adjustment

Procedure:

Mode: playback



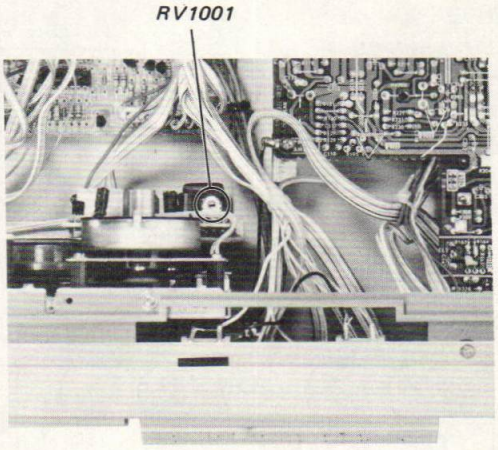
Specification:

Speed checker	Digital frequency counter
−0.7 – +0.7 %	2,980 – 3,020 Hz

Frequency difference between the beginning and the end of the tape should be within 0.7 % (20 Hz).

Adjustment Location:

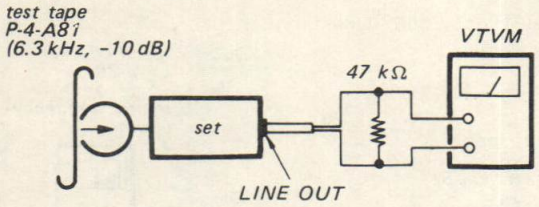
– servo amp board –



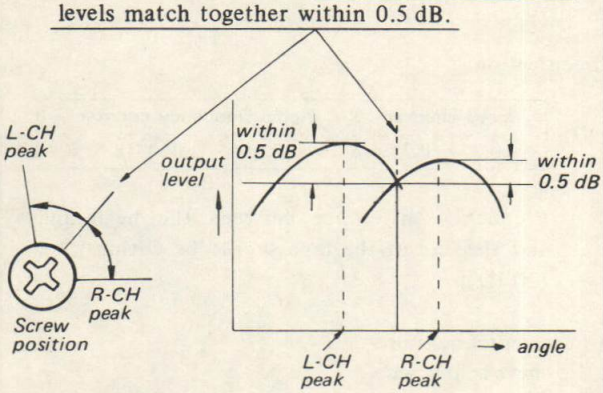
Record/playback Head Azimuth Adjustment

Procedure:

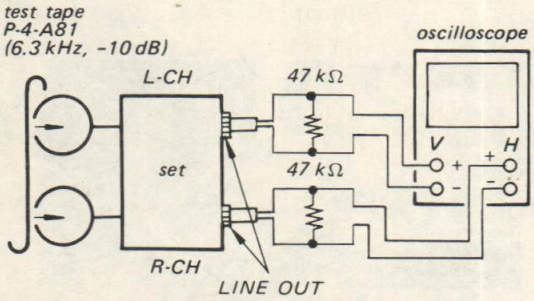
1. Mode: playback

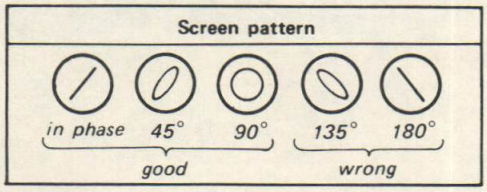


2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 0.5 dB.

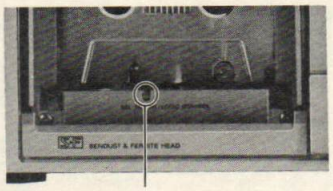


3. Phase Check
   Mode: playback





Adjustment Location:

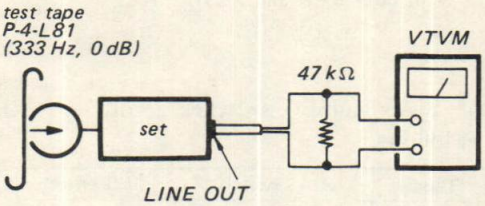


adjustment screw

Playback Level Adjustment

Procedure:

Mode: Playback



Specification:

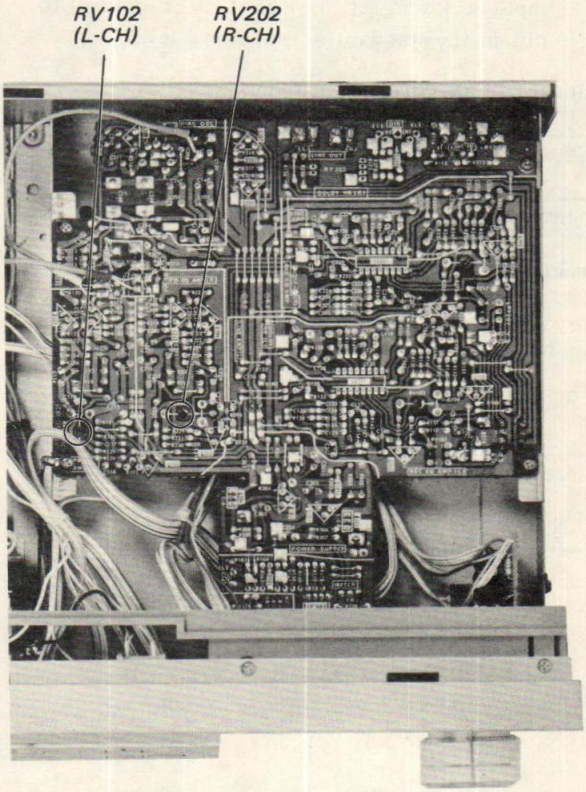
LINE OUT level: 0.52 – 0.59 V
(−3.5 to −2.5 dB)

Level difference between channels:
less than 0.5 dB

Check that the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location:

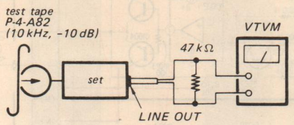
– record/playback board –



Playback Equalizer Adjustment

Procedure:

Mode: playback



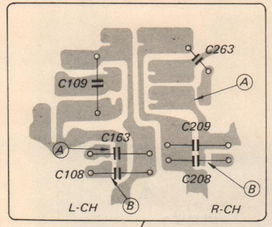
Specification:

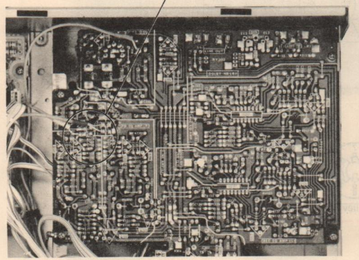
LINE OUT level: 0.12 – 0.27 V
(−16 to −9 dB)

Adjustment Location:

– record/playback board –

Bridge patterns	High frequency level
(open)	down
Ⓐ or Ⓑ	↕
Ⓐ and Ⓑ	up





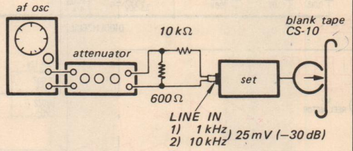
Record Bias Adjustment

Setting:

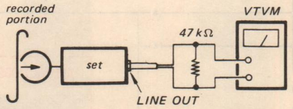
REC LEVEL control: standard record
(See page 13.)

Procedure:

1. Mode: record



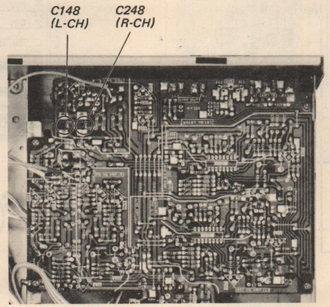
2. Mode: playback



Confirm that the LINE OUT level of 10 kHz signal is 0 dB relative to that of 1 kHz.
If necessary, adjust C148 (L-CH) and C248 (R-CH).

Adjustment Location:

– record/playback board –



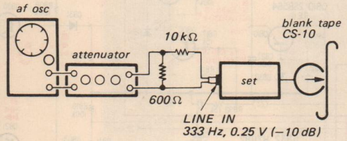
Record Level Adjustment

Setting:

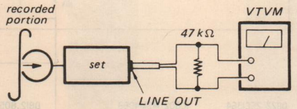
REC LEVEL control: standard record
(See page 13.)

Procedure:

1. Mode: record



2. Mode: playback

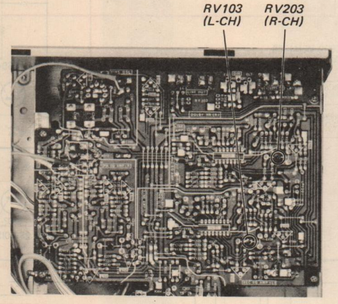


Specification:

LINE OUT level: 0.41 – 0.46 V
(−5.5 to −4.5 dB)

Adjustment Location:

– record/playback board –



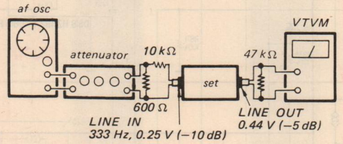
Level Meter Calibration

Setting:

REC LEVEL control: standard record
(See page 13.)

Procedure:

1. Mode: record

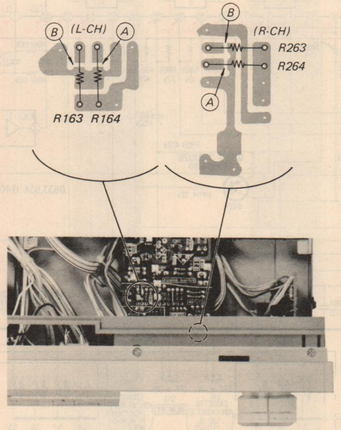


2.

Pattern connection	Pointer deflection	LEVEL meter indication
Ⓐ and Ⓑ	bigger	VU -20 10 7 5 3 0 3 +5
Ⓑ	↕	
Ⓐ		
(open)	smaller	

Adjustment Location:

– record/playback board –



SECTION 4
DIAGRAMS

Voltages and Waveforms at the Terminals of IC801.

Terminal No.	Waveform or Voltage	Terminal No.	Waveform or Voltage	Terminal No.	Waveform or Voltage
1	10VP-P; 4.75 μsec	14	Forward Mode; 10V; 0V	29	10 Vdc
2	• Forward Mode; 10VP-P; 0.7 sec; • Fast Forward Mode; 10VP-P; 20 msec; • When pause botton is pushed in forward mode: 10 Vdc; • Tape End: 10 Vdc	15	Record Mode; 10V; 0V	30	Fast Forward Mode; 10V; 0V; −2.2V; 0.3 sec.; Fast Forward button is pushed.
		16	10 Vdc		
		17	Forward Mode; 10V; 0V; 0.5 sec; Forward button is pushed.	31	Rewind Mode; 10V; 0V; 0.3 sec; Rewind button is pushed.
3	8VP-P; 8 msec	18	Record/Forward Mode; 10V; 0V	32	10 Vdc
4 to 6	10 Vdc	19	Pause Mode; 10V; 0V	33	10V; 0V; Rewind button is pushed.
7	10VP-P; 2.5 sec; S17 (POWER): ON; 10VP-P; 0.5 sec; S17 (POWER): ON	20 to 22	10 Vdc	34	10V; 0V; Stop button is pushed or the cassette lid is open.
		23	10V; 0V; Record/Forward button is pushed. Record Muting or Pause button is pushed.	35	10V; 0V; Forward button is pushed.
8	10V; 0V; Record button is pushed.	24	10 Vdc	36	10V; 0V; Fast Forward button is pushed.
9	10V; 0V; Pause button is pushed.	25	Forward or Record Mode; 10V; 3.3V; 0V; 0.6 sec; Forward or Record button is pushed.	37	• S13(MEMORY): ON; 10V; 0V; Tape counter is at 999 in rewind mode.
10	10V; 0V; Record button is pushed.	26	Fast Forward or Rewind Mode or Record/Forward/Pause Mode; 10V; 0V	38	• S14(timer): PLAY 0V dc
				39	• S14 (timer): REC 0V dc
11	10 Vdc	27	Forward Mode; 10V; 0V	40	When the accidental erasure prevention tab is broken: 0V; When the accidental erasure prevention tab is not broken: 10V
12, 13	Fast Forward or Rewind Mode; 10V; 0V	28	0.35 sec.; 10V; 0V; Forward or Fast Forward or Rewind button is pushed.	41	0 Vdc
				42	4VP-P; 4.75 μsec

4-1. SCHEMATIC DIAGRAM — System Control Section —

Refer to page 17 for voltages and waveforms at the terminals of IC801.

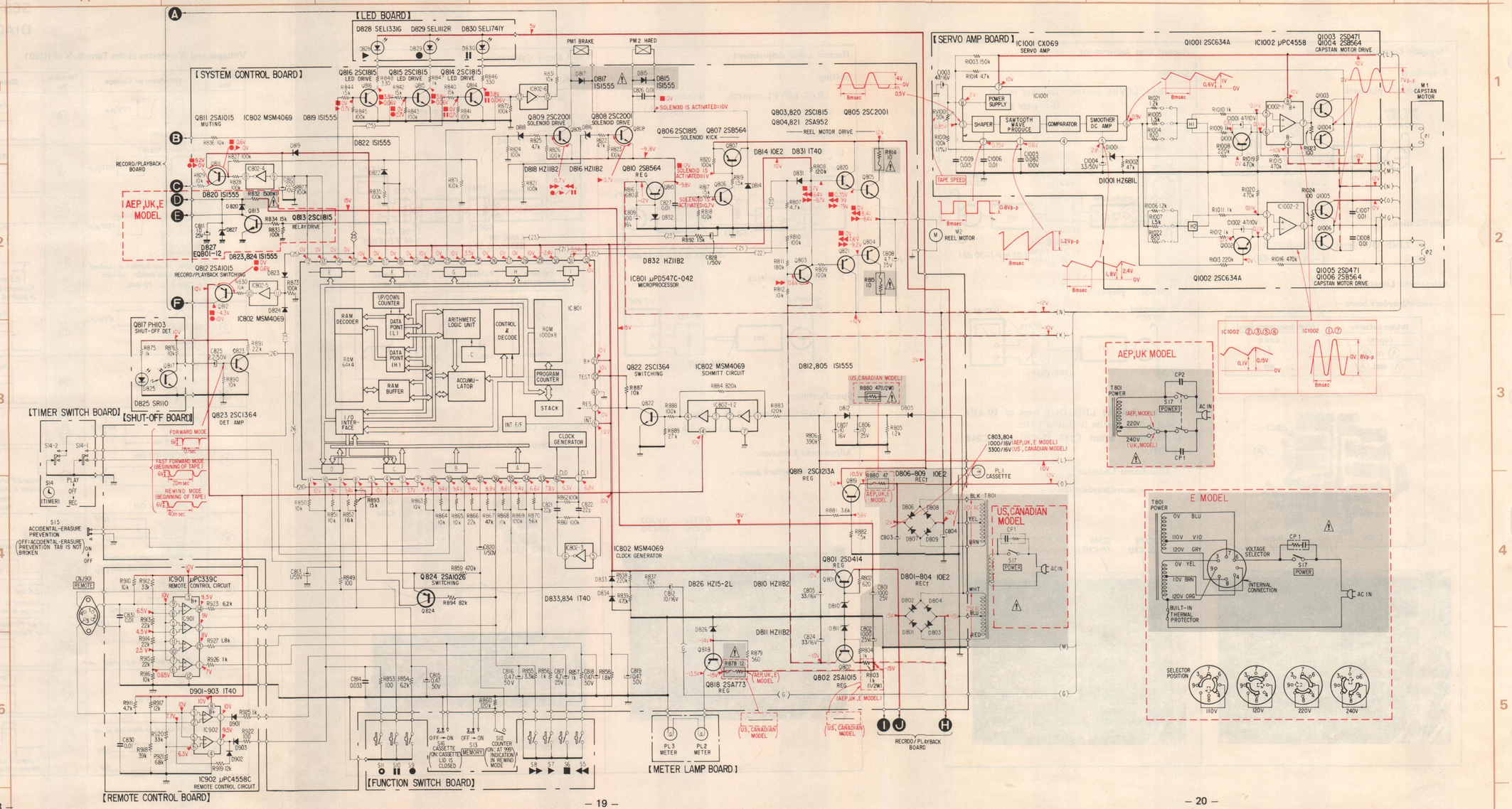
Note:

- All capacitors are in μF unless otherwise noted. pF = μμF 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ : 1000 Ω, MΩ = 1000 kΩ
- : fusible resistor.
- : nonflammable resistor.
- 1 % indicates component tolerance.
- : B+ bus.
- : B− bus.
- : panel designation.
- : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a VOM (20 kΩ/V).
  no mark: STOP
  - ▶ : FORWARD
  - ▶▶ : FAST FORWARD
  - ◀◀ : REWIND
  - ● : RECORD
  - ○ : REC MUTE
  - ❚❚ : PAUSE
  - ■ : STOP
- Voltage variations may be noted due to normal production tolerances.
- Switch

Ref. No.	Switch	Position
S5	REWIND	OFF
S6	STOP	OFF
S7	FORWARD	OFF
S8	FAST FORWARD	OFF
S9	RECORD	OFF
S10	PAUSE	OFF
S11	REC MUTE	OFF
S12	COUNTER	OFF
S13	MEMORY	OFF
S14-1, 2	TIMER	OFF
S15	ACCIDENTAL-ERASURE PREVENTION	ON
S16	CASSETTE	OFF
S17	POWER	OFF

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

ACCESSORIES AND PACKING MATERIALS

Part No.	*Description*
X-3701-105-0	Ⓐ Tip Ass'y, head cleaning
1-551-734-11	Ⓓ Cord, connection RK-74A
3-429-126-00	Bag, plastic (Canadian model)
3-561-142-00	Cushion, upper-front (Canadian model)
3-561-143-00	Cushion, upper-rear (Canadian model)
3-561-144-00	Cushion, bottom-right (Canadian model)
3-561-145-00	Cushion, bottom-left (Canadian model)
3-566-148-00	Ⓑ Cushion, upper-front (US, AEP, UK, E model)
3-566-149-00	Ⓑ Cushion, upper-rear (US, AEP, UK, E model)
3-566-150-00	Ⓑ Cushion, bottom-right (US, AEP, UK E model)
3-566-151-00	Ⓑ Cushion, bottom-left (US, AEP, UK E model)
3-566-165-00	Ⓓ Carton (US, AEP UK , E model)
3-566-166-00	Carton (Canadian model)
3-701-630-00	Ⓐ Bag, plastic
3-701-684-00	Ⓐ Card, voltage indication (AEP model)
3-770-991-11	Ⓔ Manual, instruction (AEP, UK, E model)
3-770-991-21	Manual, instruction (US model)
3-770-991-21) 3-794-575-31	Manual, instruction (Canadian model)
3-793-828-11	Ⓐ Caution Card, cassette
3-794-233-21	Ⓐ Separate Sheet, consumer products (US model)
4-818-924-00	Ⓑ Bag, plastic

1/4 WATT CARBON RESISTORS Ⓐ

Note: Circled letter Ⓐ is applicable to European models only.

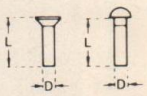
Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00	1.0M	1-246-545-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00	1.1M	1-210-814-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00	1.2M	1-210-815-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-576-00	13k	1-246-500-00	130k	1-246-524-00	1.3M	1-210-816-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-577-00	15k	1-246-501-00	150k	1-246-525-00	1.5M	1-210-817-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-578-00	16k	1-246-502-00	160k	1-246-526-00	1.6M	1-210-818-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-579-00	18k	1-246-503-00	180k	1-246-527-00	1.8M	1-210-819-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-580-00	20k	1-246-504-00	200k	1-246-528-00	2.0M	1-210-820-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-581-00	22k	1-246-505-00	220k	1-246-529-00	2.2M	1-210-821-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-582-00	24k	1-246-506-00	240k	1-246-530-00	2.4M	1-244-754-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-583-00	27k	1-246-507-00	270k	1-246-531-00	2.7M	1-244-755-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-584-00	30k	1-246-508-00	300k	1-246-532-00	3.0M	1-244-756-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-585-00	33k	1-246-509-00	330k	1-246-533-00	3.3M	1-244-757-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-586-00	36k	1-246-510-00	360k	1-246-534-00	3.6M	1-244-758-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-587-00	39k	1-246-511-00	390k	1-246-535-00	3.9M	1-244-759-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00	4.3M	1-244-760-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00	4.7M	1-244-761-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00	5.1M	1-244-762-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00		
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00		
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00		
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00		
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00		
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00		

HARDWARE NOMENCLATURE

Screw:

– P 3 x 10

- *L: Length in mm*
- *D: Diameter in mm*
- *Type of head*
- *Indicated slotted-head only. Unless otherwise indicated, it means cross-recessed head (Phillips type).*



Nut, Washer, Retaining ring:

N 3

- *Diameter of usable screw or shaft*
- *Reference designation*

Reference Designation	Shape	Description	Remarks
		SCREWS	
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		braizer-head screw	

Reference Designation	Shape	Description	Remarks
		SELF-TAPPING SCREWS	
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
		SET SCREWS	
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
		NUT	
N		nut	
		WASHERS	
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
		RETAINING RINGS	
E		retaining ring	
G		grip-type retaining ring	

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